

GenCore version 5.1.3
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OM protein - protein search, using sw model

Run on: October 21, 2002, 09:47:36 ; Search time 25 seconds
(without alignments)
207.594 Million cell updates/sec

Title: US-09-720-828A-4

Perfect score: 147
Sequence: 1 APTSSSTKKTQLQLEHLLLDLQMLNGINN 30

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 562222 seqs, 172994929 residues

Total number of hits satisfying chosen parameters: 562222

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database : SPTREMBL_19:*

- 1: sp-archaea:*
- 2: sp-bacteria:*
- 3: sp-fungi:*
- 4: sp-human:*
- 5: sp-invertebrate:*
- 6: sp-mammal:*
- 7: sp-mhc:*
- 8: sp-organelle:*
- 9: sp-plant:*
- 10: sp-rodent:*
- 11: sp-virus:*
- 12: sp-vertebrate:*
- 13: sp-vertebrate:*
- 14: sp-unclassified:*
- 15: sp-virus:*
- 16: sp-bacteriap:*
- 17: sp-archaeap:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	147	100.0	150	4 Q9C001	Q9C001 homo sapien
2	145	98.6	154	6 Q9XS38	Q9XS38 papio hamad
3	135.5	92.2	156	4 Q13169	Q13169 homo sapien
4	134	91.2	139	4 Q16334	Q16334 homo sapien
5	108.5	73.8	155	6 Q9XT83	Q9XT83 halichoerus
6	107.5	73.1	66	6 Q9BG74	Q9BG74 canis fami
7	107	72.8	79	6 Q9TV12	Q9TV12 canis fami
8	106	72.1	133	6 Q9WZR9	Q9WZR9 oryctolagus
9	106	72.1	155	11 Q9Z3T2	Q9Z3T2 sigmodon hi
10	103	70.1	138	11 Q70329	Q70329 mesocricetu
11	91	61.9	23	4 Q9UCF5	Q9UCF5 homo sapien
12	83	56.5	154	6 Q9XT84	Q9XT84 delphinapte
13	82	55.8	152	11 Q88210	Q88210 cavia porce
14	79	53.7	69	6 Q9GJRA	Q9GJRA ovis aries
15	79	53.7	155	6 Q9GL83	Q9GL83 capra hircu
16	79	53.7	155	6 Q95MP4	Q95MP4 ovis aries

17	79	53.7	155	6 Q95KP3	Q95kp3 bubalus bub
18	69	46.9	39	6 Q9BG73	Q9bg73 canis fami
19	69	46.9	150	11 P70291	P70291 mus musculu
20	69	46.9	169	11 Q9QUS8	Q9qus8 mus musculu
21	67	45.6	150	11 P70294	P70294 mus musculu
22	62.5	42.5	159	11 P70293	P70293 mus musculu
23	60.5	41.2	155	11 P70292	P70292 mus musculu
24	52	35.4	116	6 Q29138	Q29138 trichechus
25	52	35.4	737	16 Q9KT05	Q9kt05 vibrio chol
26	51	34.7	304	16 Q930K5	Q930k5 rhizobium m
27	51	34.7	457	5 Q9NIP5	Q9nip5 strongyloce
28	50	34.0	365	16 P71599	P71599 mycobacteri
29	50	34.0	1454	4 Q60244	Q60244 homo sapien
30	50	34.0	1454	4 Q9UNB3	Q9unb3 homo sapien
31	50	34.0	3175	12 Q91DM2	Q91dm2 equine arte
32	49	33.3	458	5 O15996	O15996 hemientrot
33	49	33.3	543	16 Q9KSF8	Q9ksf8 vibrio chol
34	49	33.3	1130	5 Q20661	Q20661 caenorhabdi
35	48.5	33.0	240	5 Q20417	Q20417 caenorhabdi
36	48	32.7	441	2 O69192	O69192 listeria mo
37	48	32.7	441	16 Q928V0	Q928v0 listeria in
38	48	32.7	651	10 Q22042	Q22042 arabidopsis
39	47.5	32.3	155	3 Q74353	Q74353 schizosacch
40	47	32.0	114	17 Q96YK4	Q96yk4 sulfolobus
41	47	32.0	230	16 Q9KM56	Q9kms6 vibrio chol
42	47	32.0	398	16 O50911	O50911 borrelia bu
43	47	32.0	557	16 Q99VT6	Q99vt6 staphylococ
44	47	32.0	1008	3 Q90U99	Q9uu99 schizosacch
45	47	32.0	1657	5 Q9VU76	Q9vu76 drosophila

ALIGNMENTS

RESULT 1

ID	Q9C001	PRELIMINARY;	PRT;	150 AA.
AC	Q9C001;			
DT	01-JUN-2001 (TrEMBLrel. 17, Created)			
DT	01-JUN-2001 (TrEMBLrel. 17, Last sequence update)			
DT	01-DEC-2001 (TrEMBLrel. 19, Last annotation update)			
DE	INTERLEUKIN-2 (FRAGMENT).			
OS	Homo sapiens (Human).			
OC	Eukaryota; Metazoa; Chordata; Vertebrata; Euteleostomi;			
OX	Mammalia; Eutheria; Primates; Catarrhini; Homnidae; Homo.			
NCBI_TaxID	9606;			
RN	[1]			
RP	SEQUENCE FROM N.A.			
RX	MEDLINE=20545237; PubMed=11093171;			
RA	Matesanz F., Delgado C., Fresno M., Alcina A.;			
RT	"Allelic selection of human IL-2 gene.";			
RL	Eur. J. Immunol. 30:3516-3521(2000).			
DR	EMBL; AF228636; AAG53575.1; -			
DR	HSSP; P01585; 3INK.			
DR	InterPro; IPR000779; Interleukin-2.			
DR	Pfam; PF00715; IL2; 1.			
DR	PRINTS; PR00265; INTERLEUKIN2.			
DR	PRODOM; PD003649; Interleukin-2; 1.			
DR	SMART; SM00189; IL2; 1.			
DR	PROSITE; PS00424; INTERLEUKIN_2; 1.			
FT	NON_TER 150 150			
SQ	SEQUENCE 150 AA; 17312 MW; BF25860F8436ACE5 CRC64;			

Query Match 100.0%; Score 147; DB 4; Length 150;
Best Local Similarity 100.0%; Pred. No. 1.4e-14;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

OY 1 APTSSSTKKTQLQLEHLLLDLQMLNGINN 30

Db 21 APTSSSTKKTQLQLEHLLLDLQMLNGINN 50

RESULT 2

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O9XS38
ID Q9XS38 PRELIMINARY; PRT; 154 AA.
AC Q9XS38;
DT 01-NOV-1999 (TREMBLrel. 12, Created)
DT 01-NOV-1999 (TREMBLrel. 12, Last sequence update)
DT 01-OCT-2001 (TREMBLrel. 18, Last annotation update)
DE IL-2.
OS Papio hamadryas (Hamadryas baboon),
OS Aotus lemurinus (Northern gray-necked night monkey),
OS Aotus nancymaeae (owl monkey),
OS Aotus nigriceps (black-headed night monkey), and
OS Aotus vociferans (noisy night monkey).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Cercopitheciidae;
OC Cercopitheciinae; Papio.
OX NCBI_TaxID=9557, 43147, 37293, 57175, 57176;
RN [1]
SEQUENCE FROM N.A.
RA Murillo L.A., Hernandez E., Echeverry S.J., Mendez J.A., Moreno A.,
RA Patariroyo M.E.;
RL Submitted (FEB-1997) to the EMBL/GenBank/DBJ databases.
DR EMBL; U88365; AAD41538.1; -
DR EMBL; U88364; AAD41534.1; -
DR EMBL; U88361; AAD41535.1; -
DR EMBL; U88363; AAD41536.1; -
DR EMBL; U88362; AAD41537.1; -
DR HSSP; P01585; 3INK.
DR InterPro; IPR000779; Interleukin-2.
DR Pfam; PF00715; IL2; 1.
DR PRINTS; PR00265; INTERLEUKIN2.
DR ProDom; PD003649; Interleukin-2; 1.
DR SMART; SM00189; IL2; 1.
DR PROSITE; PS00424; INTERLEUKIN_2; 1.
DR SEQUENCE 154 AA; 17675 MW; AB752ABBADA96469 CRC64;
SQ
Query Match 98.6%; Score 145; DB 6; Length 154;
Best Local Similarity 96.7%; Pred. No. 2.9e-14;
Matches 29; Conservative 1; Mismatches 0; Indels 0; Gaps 0;
QY 1 APTSSSTKTKTQLEHLLDLQMLGNN 30
Db 21 APTSSSTKTKTQLEHLLDLQMLGNN 50
RESULT 3
Q13169
ID Q13169 PRELIMINARY; PRT; 156 AA.
AC Q13169;
DT 01-NOV-1996 (TREMBLrel. 01, Created)
DT 01-NOV-1996 (TREMBLrel. 01, Last sequence update)
DT 01-DEC-2001 (TREMBLrel. 19, Last annotation update)
DE INTERLEUKIN 2.
GN IL2.
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX NCBI_TaxID=9606;
RN [1]
SEQUENCE FROM N.A.
RA Xu D., Wu Y., Chen J., Yu L., Zhong M., Hul Y., Qu H.;
RA "Expression of human IL-2 from gene transferred mouse melanoma cells
and its effect on the growth of mouse melanoma.";
RL Chung-Hua Min Kuo Wei Sheng Wu Chi Mien I Hsueh Tsa Chih
RL 13:78-82(1993).
RN [2]
SEQUENCE FROM N.A.
RA Xu L.;
RA Submitted (APR-1995) to the EMBL/GenBank/DBJ databases.
RL EMBL; U25676; AAA70092.1; -.
DR HSSP; P01585; 3INK.
DR InterPro; IPR000779; Interleukin-2.
DR Pfam; PF00715; IL2; 1.
DR PRINTS; PR00265; INTERLEUKIN2.

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DR ProDom; PD003649; Interleukin-2; 1.
DR SMART; SM00189; IL2; 1.
DR PROSITE; PS00424; INTERLEUKIN_2; 1.
SQ SEQUENCE 156 AA; 18002 MW; 8E0452D43B336389 CRC64;
Query Match 92.2%; Score 135.5; DB 4; Length 156;
Best Local Similarity 90.9%; Pred. No. 8.1e-13;
Matches 30; Conservative 0; Mismatches 0; Indels 3; Gaps 1;
QY 1 APTSSS---TKKTLQLEHLLDLQMLGNN 30
Db 21 APTSSSTKTKTQLEHLLDLQMLGNN 53
RESULT 4
Q16334
ID Q16334 PRELIMINARY; PRT; 139 AA.
AC Q16334;
DT 01-NOV-1996 (TREMBLrel. 01, Created)
DT 01-NOV-1996 (TREMBLrel. 01, Last sequence update)
DT 01-OCT-2001 (TREMBLrel. 18, Last annotation update)
DE IL-2 PROTEIN (FRAGMENT).
GN IL-2.
OS Homo sapiens (Human).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
OX NCBI_TaxID=9606;
RN [1]
SEQUENCE FROM N.A.
RA MEDLINE-95239150; PubMed-7722480;
RA Eizenberg O., Faber-Elman A., Lotan M., Schwartz M.;
RT "Interleukin-2 transcripts in human and rodent brains: possible
expression by astrocytes.";
RL J. Neurochem. 64:1928-1936(1995).
DR EMBL; S7835; AAD14264.1; -.
DR HSSP; P01585; 3INK.
DR InterPro; IPR000779; Interleukin-2.
DR Pfam; PF00715; IL2; 1.
DR PRINTS; PR00265; INTERLEUKIN2.
DR ProDom; PD003649; Interleukin-2; 1.
DR SMART; SM00189; IL2; 1.
DR PROSITE; PS00424; INTERLEUKIN_2; 1.
FT NON_TER 1
FT SEQUENCE 139 AA; 15986 MW; 731FBA406D0C63C5 CRC64;
Query Match 91.2%; Score 134; DB 4; Length 139;
Best Local Similarity 93.3%; Pred. No. 1.2e-12;
Matches 28; Conservative 0; Mismatches 2; Indels 0; Gaps 0;
QY 1 APTSSSTKTKTQLEHLLDLQMLGNN 30
Db 17 APTSSSTKTKTQLEHLLDLQMLGNN 46
RESULT 5
Q9XT83
ID Q9XT83 PRELIMINARY; PRT; 155 AA.
AC Q9XT83;
DT 01-NOV-1999 (TREMBLrel. 12, Created)
DT 01-NOV-1999 (TREMBLrel. 12, Last sequence update)
DT 01-DEC-2001 (TREMBLrel. 19, Last annotation update)
DE INTERLEUKIN 2.
OS Halichoerus grypus (Gray seal).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Carnivora; Pinnipedia; Phocidae; Halichoerus.
OX NCBI_TaxID=9711;
RN [1]
SEQUENCE FROM N.A.
RA MEDLINE-99221046; PubMed-10206205;
RA St-Laurent G., Bellevue C., Archambault D.;
RT "Molecular cloning and phylogenetic analysis of beluga whale
(Delphinapterus leucas) and grey seal (Halichoerus grypus) interleukin
2.";
RN [2]

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BL Vet. Immunol. Immunopathol. 67:385-394(1999).
 DR EMBL; AF072871; AAD40848.1; -;
 DR HSP; P01585; JINK.
 DR InterPro: IPR000779; Interleukin-2.
 DR Pfam; PF00715; IL2; 1.
 DR PRINTS; PR00265; INTERLEUKIN2.
 DR ProDom; PD003649; Interleukin-2; 1.
 DR SMART; SM00189; IL2; 1.
 DR PROSITE; PS00424; INTERLEUKIN_2; 1.
 SQ SEQUENCE 155 AA; 17860 MW; F18F449AC672241A CRC64;

Query Match 73.8%; Score 108.5; DB 6; Length 155;

Best Local Similarity 74.2%; Pred. No. 1e-08; Matches 23; Conservative 5; Mismatches 2; Indels 1; Gaps 1;

Oy 1 AP-TSSSTKKTQLEHLLDLQMLNGIN 30
 Db 21 APTSSSTKETQOEQLLDLQLLNGVNN 51

RESULT 6

ID Q9BG74 PRELIMINARY; PRT; 66 AA.

AC Q9BG74;
 DT 01-JUN-2001 (TRENBLrel. 17, Created)
 DT 01-JUN-2001 (TRENBLrel. 17, Last sequence update)
 DT 01-DEC-2001 (TRENBLrel. 19, Last annotation update)
 DE INTERLEUKIN 2 (FRAGMENT).
 OS Canis familiaris (Dog).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
 ON NCBI_TaxID=9615;
 RN [1]
 RP SEQUENCE FROM N.A.
 RC TISSUE=BLOOD;
 RA Markus S., Groene A., Baumgaertner W.;
 RT "Expression of canine interleukin-2 mRNA in concanavalin A-stimulated
 RL canine lymphocytes";
 RL Submitted (JAN-2001) to the EMBL/GenBank/DBJ databases.
 DR EMBL; AF333117; AAK01437.1; -;
 DR HSP; P01585; IIRL.
 DR InterPro: IPR000779; Interleukin-2.
 DR PRINTS; PR00265; INTERLEUKIN2.
 DR ProDom; PD003649; Interleukin-2; 1.
 DR SMART; SM00189; IL2; 1.
 FT NON_TER 1 66
 FT SEQUENCE 66 AA; 7389 MW; 22A893F79DA2AE47 CRC64;

Query Match 73.1%; Score 107.5; DB 6; Length 66;

Best Local Similarity 71.0%; Pred. No. 6.3e-09; Matches 22; Conservative 6; Mismatches 2; Indels 1; Gaps 1;

Oy 1 AP-TSSSTKKTQLEHLLDLQMLNGIN 30
 Db 14 APTSSSTKETQOEQLLDLQLLNGVNN 44

RESULT 7

ID Q9IV12 PRELIMINARY; PRT; 79 AA.

AC Q9IV12;
 DT 01-MAY-2000 (TRENBLrel. 13, Created)
 DT 01-MAY-2000 (TRENBLrel. 13, Last sequence update)
 DT 01-OCT-2001 (TRENBLrel. 18, Last annotation update)
 DE INTERLEUKIN-2 (FRAGMENT).
 OS Canis familiaris (Dog).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
 ON NCBI_TaxID=9615;
 RN [1]
 RP SEQUENCE FROM N.A.
 RA German A.J., Helps C.R., Harley R., Hall E.J., Day M.J.;

Cloning and sequencing of canine IL-2.
 RL Submitted (SEP-1998) to the EMBL/GenBank/DBJ databases.
 DR EMBL; AF091131; AAD4689.1; -;
 DR HSP; P01585; IIRL.
 DR InterPro: IPR000779; Interleukin-2.
 DR Pfam; PF00715; IL2; 1.
 DR PRINTS; PR00265; INTERLEUKIN2.
 DR ProDom; PD003649; Interleukin-2; 1.
 DR SMART; SM00189; IL2; 1.
 DR PROSITE; PS00424; INTERLEUKIN_2; 1.
 FT NON_TER 1 79
 FT SEQUENCE 79 AA; 9087 MW; 83079BF8FA659BD CRC64;

Query Match 72.8%; Score 107; DB 6; Length 79;

Best Local Similarity 71.4%; Pred. No. 9e-09; Matches 20; Conservative 6; Mismatches 2; Indels 0; Gaps 0;

Oy 3 TSSSTKKTQLEHLLDLQMLNGIN 30
 Db 7 TSSSTKETQOEQLLDLQLLNGVNN 34

RESULT 8

ID Q9M2R9 PRELIMINARY; PRT; 133 AA.

AC Q9M2R9;
 DT 01-OCT-2000 (TRENBLrel. 15, Created)
 DT 01-OCT-2000 (TRENBLrel. 15, Last sequence update)
 DT 01-DEC-2001 (TRENBLrel. 19, Last annotation update)
 DE INTERLEUKIN 2 VARIANT IL2DELTA2.
 GN IL-2.
 OS Oryctolagus cuniculus (Rabbit).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Lagomorpha; Leporidae; Oryctolagus.
 ON NCBI_TaxID=9986;
 RN [1]
 RP SEQUENCE FROM N.A.
 RC TISSUE=SPLEEN, LYMPH NODE;
 RA MEDLINE=20304414; PubMed=10843729;
 RA Perkins H.D., van Leeuwen B.H., Hardy C.M., Kerr P.J.;
 RT "The complete cDNA sequences of IL-2, IL-4, IL-6 and IL-10 from the
 RL European rabbit (Oryctolagus cuniculus).";
 RL Cytokine 12:555-565(2000).
 DR EMBL; AF150168; AAF86652.1; -;
 DR HSP; P01585; JINK.
 DR InterPro: IPR000779; Interleukin-2.
 DR Pfam; PF00715; IL2; 1.
 DR ProDom; PD003649; Interleukin-2; 1.
 DR SMART; SM00189; IL2; 1.
 DR PROSITE; PS00424; INTERLEUKIN_2; 1.
 SQ SEQUENCE 133 AA; 14748 MW; 0D54758C190B5655 CRC64;

Query Match 72.1%; Score 106; DB 6; Length 133;

Best Local Similarity 72.4%; Pred. No. 2.2e-08; Matches 21; Conservative 5; Mismatches 3; Indels 0; Gaps 0;

Oy 1 APTSSSTKKTQLEHLLDLQMLNGIN 29
 Db 21 APTSSSTKETQOEQLLDLQLLNGVNN 49

RESULT 9

ID Q923T2 PRELIMINARY; PRT; 155 AA.

AC Q923T2;
 DT 01-DEC-2001 (TRENBLrel. 19, Created)
 DT 01-DEC-2001 (TRENBLrel. 19, Last sequence update)
 DT 01-DEC-2001 (TRENBLrel. 19, Last annotation update)
 DE INTERLEUKIN 2.
 OS Sigmodon hispidus (hispid cotton rat).
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
 OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Sigmodontinae;

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OX Sigmodon.
RN NCBI_TaxID=42415;
RP [1]
RX SEQUENCE FROM N.A.
RA Darnell M.R., Plesneva L.M., Langley R.J., Bianco J.C., Prince G.A.;
RT "Cloning, expression and purification of cotton rat IL-2.*";
RL Submitted (JUL-2001) to the EMBL/GenBank/DBJ databases.
DR ENBL; AF398549; AAK94012.1; -.
SQ SEQUENCE 155 AA; 17627 MW; ACADEA865E993291 CRC64;

Query Match
Best Local Similarity 72.1%; Score 106; DB 11; Length 155;
Matches 22; Conservative 3; Mismatches 5; Indels 0; Gaps 0;

QY 1 APTSSSTKKTQLQLEHLLDLQMLNGINN 30
DB 21 APTSSSTKKTQLQLEHLLDLQVLRGKIN 50

RESULT 10
O70329
ID O70329 PRELIMINARY; PRT: 138 AA.
AC O70329;
DT 01-AUG-1998 (TREMBLrel. 07, Created)
DT 01-AUG-1998 (TREMBLrel. 07, Last sequence update)
DT 01-OCT-2001 (TREMBLrel. 18, Last annotation update)
DE INTERLEUKIN-2 (FRAGMENT).
OS Mesocricetus auratus (Golden hamster).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Cricetinae;
OC Mesocricetus.
OX NCBI_TaxID=10036;
RN [1]
RX SEQUENCE FROM N.A.
RA TISSUE-SPLEEN;
RX MEDLINE=98234044; PubMed=9573100;
RA Melby P.C., Tryon V.V., Chandrasekar B., Freeman G.L.;
RT "Cloning of Syrian hamster (Mesocricetus auratus) cytokine cDNAs and
analysis of cytokine mRNA expression in experimental visceral
leishmaniasis.*";
RL Infect. Immun. 66:2135-2142(1998).
DR EMBL; AF046212; AAC40097.1; -.
DR HSSP; P01585; 3INX.
DR InterPro: IPR000779; Interleukin-2.
DR Pfam: PF00715; IL2; 1.
DR PRINTS; PR00265; INTERLEUKIN2..
DR ProDom; PD003649; Interleukin-2; 1.
DR SMART; SM00189; IL2; 1.
DR PROSITE; PS00424; INTERLEUKIN_2; 1.
FT NON_TER 1
FT NON_TER 138
SQ SEQUENCE 138 AA; 15739 MW; 351032995B670779 CRC64;

Query Match
Best Local Similarity 70.1%; Score 103; DB 11; Length 138;
Matches 22; Conservative 2; Mismatches 6; Indels 0; Gaps 0;

QY 1 APTSSSTKKTQLQLEHLLDLQMLNGINN 30
DB 14 APTSSSTKKTQLQLEHLLDLQELLGKIN 43

RESULT 11
Q9UCF5
ID Q9UCF5 PRELIMINARY; PRT: 23 AA.
AC Q9UCF5;
DT 01-MAY-2000 (TREMBLrel. 13, Created)
DT 01-MAY-2000 (TREMBLrel. 13, Last sequence update)
DT 01-JUN-2000 (TREMBLrel. 14, Last annotation update)
DE INTERLEUKIN 2 (FRAGMENT).
OS Homo sapiens (human).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

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OX NCBI_TaxID=9606;
RN [1]
RX SEQUENCE.
RA MEDLINE=99289963; PubMed=8512072;
RA Mullner S., Karbe-Thonges B., Triplier D.;
RT "Charge heterogeneity of insulin fusion proteins expressed in
Escherichia coli is not due to proteolytic degradation.*";
RL Anal. Biochem. 210:366-373(1993).
SQ SEQUENCE 23 AA; 2637 MW; 40B64C6875CE021F CRC64;

Query Match
Best Local Similarity 90.5%; Score 91; DB 4; Length 23;
Matches 19; Conservative 0; Mismatches 2; Indels 0; Gaps 0;

QY 3 TSSSTKKTQLQLEHLLDLQML 23
DB 3 TSXSTKKTQLQLEHLLDLQML 23

RESULT 12
Q9XT84
ID Q9XT84 PRELIMINARY; PRT: 154 AA.
AC Q9XT84;
DT 01-NOV-1999 (TREMBLrel. 12, Created)
DT 01-NOV-1999 (TREMBLrel. 12, Last sequence update)
DT 01-DEC-2001 (TREMBLrel. 19, Last annotation update)
DE INTERLEUKIN 2.
OS Delphinapterus leucas (Beluga whale).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Cetacea; Odontoceti;
OC Monodontidae; Delphinapterus.
OX NCBI_TaxID=9749;
RN [1]
RX SEQUENCE FROM N.A.
RA MEDLINE=99221046; PubMed=10206205;
RA St-Laurent G., Bellevue C., Archambault D.;
RT "Molecular cloning and phylogenetic analysis of beluga whale
(Delphinapterus leucas) and grey seal (Halichoerus grypus) interleukin
2.*";
RL Vet. Immunol. Immunopathol. 67:385-394(1999).
DR EMBL; AF072870; AAD40847.1; -.
DR HSSP; P01585; 3INX.
DR InterPro: IPR000779; Interleukin-2.
DR Pfam: PF00715; IL2; 1.
DR PRINTS; PR00265; INTERLEUKIN2.
DR ProDom; PD003649; Interleukin-2; 1.
DR SMART; SM00189; IL2; 1.
DR PROSITE; PS00424; INTERLEUKIN_2; 1.
SQ SEQUENCE 154 AA; 17652 MW; 4288D3D41D04F172 CRC64;

Query Match
Best Local Similarity 56.5%; Score 83; DB 6; Length 154;
Matches 17; Conservative 6; Mismatches 7; Indels 0; Gaps 0;

QY 1 APTSSSTKKTQLQLEHLLDLQMLNGINN 30
DB 21 APTSSSTKKTQLQLEHLLDLQMLNGINN 50

RESULT 13
O88210
ID O88210 PRELIMINARY; PRT: 152 AA.
AC O88210;
DT 01-NOV-1998 (TREMBLrel. 08, Created)
DT 01-NOV-1998 (TREMBLrel. 08, Last sequence update)
DT 01-OCT-2001 (TREMBLrel. 18, Last annotation update)
DE INTERLEUKIN 2 PRECURSOR.
OS Cavia porcellus (Guinea pig).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Mystricognathi; Cavidae; Cavia.
OX NCBI_TaxID=10141;
RN [1]
RX SEQUENCE FROM N.A.

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RC TISSUE-SPLEEN;
RA Takeyoshi M., Iwata H., Inoue T.;
RT "Guinea pig Interleukin 2(IL-2) precursor.";
RL Submitted (JAN-1998) to the EMBL/GenBank/DBJ databases.
DR EMBL; AB010093; BAA31346.1; -
DR HSSP; P01585; IIRL.
DR InterPro; IPR000779; Interleukin-2.
DR Pfam; PF00715; IL2; 1.
DR PRINTS; PR00265; INTERLEUKIN2.
DR PRODOM; PD003649; Interleukin-2; 1.
DR SMART; SM00189; IL2; 1.
KW Signal.
FT SIGNAL.
FT CHAIN.
SQ SEQUENCE 152 AA; 17271 MW; CA7AC08C1B8DD1FA CRC64;

Query Match
Best Local Similarity 55.8%; Score 82; DB 11; Length 152;
Matches 18; Conservative 5; Mismatches 7; Indels 0; Gaps 0;

QY 1 APTSSSTKKTQLEHLLDLQMLNGINN 30
DB 21 APTSSSPKQTQDRLELLLRQLQLLEGVTS 50
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RESULT 14
Q9GJR4 PRELIMINARY; PRT; 69 AA.
AC Q9GJR4;
DT 01-MAR-2001 (TrEMBLrel. 16, Created)
DT 01-MAR-2001 (TrEMBLrel. 16, Last sequence update)
DT 01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
DE INTERLEUKIN 2 PRECURSOR (FRAGMENT).
GN IL-2.
OS Ovis aries (Sheep).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;
OC Bovidae; Caprinae; Ovis.
OX NCBI_TaxID=9940;
RN [1]
RP SEQUENCE FROM N.A.
RC STRAIN-SHEEP 2, AND SHEEP 1;
RA Luenken G., Prinzenberg E.-M., Hiendleder S., Erhardt G.;
RT "A single strand conformation polymorphism in the ovine Interleukin 2
(IL-2) gene.";
RL J. Anim. Sci. 0:0-0(2000).
DR EMBL; AF215687; AAG43986.1; -
DR EMBL; AF213883; AAG35709.1; -
DR HSSP; P01585; IIRL.
DR InterPro; IPR000779; Interleukin-2.
DR PRINTS; PR00265; INTERLEUKIN2.
DR PRODOM; PD003649; Interleukin-2; 1.
DR SMART; SM00189; IL2; 1.
KW Signal.
FT SIGNAL.
FT CHAIN.
FT NON_TER.
SQ SEQUENCE 69 AA; 7711 MW; B8768C23BB34D1AE CRC64;

Query Match
Best Local Similarity 53.7%; Score 79; DB 6; Length 69;
Matches 16; Conservative 6; Mismatches 8; Indels 0; Gaps 0;

QY 1 APTSSSTKKTQLEHLLDLQMLNGINN 30
DB 21 APTSSSTGNTMKVKSLLDLQLLKGKVN 50
||||| |:::| |:::| |:::| |:::| |:::|

RESULT 15
Q9GL83 PRELIMINARY; PRT; 155 AA.
AC Q9GL83;
DT 01-MAR-2001 (TrEMBLrel. 16, Created)
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DT 01-MAR-2001 (TrEMBLrel. 16, Last sequence update)
DT 01-DEC-2001 (TrEMBLrel. 19, Last annotation update)
DE INTERLEUKIN 2.
GN IL-2.
OS Capra hircus (Goat).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;
OC Bovidae; Caprinae; Capra.
OX NCBI_TaxID=9925;
RN [1]
RP SEQUENCE FROM N.A.
RA Ying Q.H., Li X.R., Pan J.Y.;
RT "Cloning of the goat IL-2 gene and its expression in E.coli.";
RL Submitted (SEP-2000) to the EMBL/GenBank/DBJ databases.
DR EMBL; AF307018; AAG28783.1; -
DR HSSP; P01585; 3INK.
DR InterPro; IPR000779; Interleukin-2.
DR Pfam; PF00715; IL2; 1.
DR PRINTS; PR00265; INTERLEUKIN2.
DR PRODOM; PD003649; Interleukin-2; 1.
DR SMART; SM00189; IL2; 1.
DR PROSITE; PS00424; INTERLEUKIN_2; 1.
SQ SEQUENCE 155 AA; 17605 MW; EEB2DE18F5469AA CRC64;

Query Match
Best Local Similarity 53.7%; Score 79; DB 6; Length 155;
Matches 16; Conservative 6; Mismatches 8; Indels 0; Gaps 0;

QY 1 APTSSSTKKTQLEHLLDLQMLNGINN 30
DB 21 APTSSSTGNTMKVKSLLDLQLLKGKVN 50
||||| |:::| |:::| |:::| |:::| |:::|

Search completed: October 21, 2002, 09:49:35
Job time : 27 secs
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GenCore version 5.1.3
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OM protein - protein search, using sw model

Run on: October 21, 2002, 09:48:11 : Search time 13 seconds
(without alignments)
56.367 Million cell updates/sec

Title: US-09-720-828A-4

Perfect score: 147

Sequence: 1 APTSSSTKKTQLEHLLLDQMLINGINN 30

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 231628 seqs, 24425594 residues

Total number of hits satisfying chosen parameters: 231628

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database :

Issued_Patents_AA:*
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2: /cgn2_6/ptodata/1/iaa/5B_COMB.pep:*
3: /cgn2_6/ptodata/1/iaa/6A_COMB.pep:*
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5: /cgn2_6/ptodata/1/iaa/PCTUS_COMB.pep:*
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	147	100.0	31	4	US-09-116-594-2
2	147	100.0	50	1	US-08-127-351-13
3	147	100.0	50	1	US-08-480-367B-13
4	147	100.0	50	1	US-08-487-221A-13
5	147	100.0	50	1	US-08-480-370-13
6	147	100.0	88	4	US-08-817-787-15
7	147	100.0	96	1	US-08-160-376A-5
8	147	100.0	96	1	US-08-389-487-8
9	147	100.0	133	1	US-07-800-366-1
10	147	100.0	133	1	US-08-354-456A-5
11	147	100.0	133	1	US-08-225-224-3
12	147	100.0	133	1	US-08-318-193-89
13	147	100.0	133	1	US-08-284-393B-1
14	147	100.0	133	1	US-08-284-393B-2
15	147	100.0	133	1	US-08-284-393B-3
16	147	100.0	133	1	US-08-734-471-1
17	147	100.0	133	3	US-08-722-258-3
18	147	100.0	133	3	US-08-817-787-13
19	147	100.0	133	4	US-09-310-026-1
20	147	100.0	133	5	PCT-US95-04468-3
21	147	100.0	133	5	PCT-US95-08950-1
22	147	100.0	133	5	PCT-US95-08950-2
23	147	100.0	133	5	PCT-US95-08950-3
24	147	100.0	133	6	5210029-1
25	147	100.0	133	6	5256769-1
26	147	100.0	133	6	5464939-2
27	147	100.0	134	6	5496924-55

28	147	100.0	153	3	US-09-012-366-3
29	147	100.0	153	4	US-08-759-628-8
30	147	100.0	153	4	US-09-522-217-111
31	147	100.0	153	6	5314995-7
32	147	100.0	157	4	US-08-818-562-2
33	147	100.0	478	3	US-08-155-888-2
34	147	100.0	504	1	US-07-932-915-2
35	147	100.0	504	5	PCT-US91-05826-2
36	144	98.0	251	3	US-08-875-811-59
37	144	98.0	254	3	US-08-875-811-61
38	143	97.3	133	1	US-08-354-456A-6
39	132.5	90.1	127	3	US-08-806-121B-3
40	102	69.4	141	4	US-08-930-917A-18
41	79	53.7	135	2	US-08-383-621-5
42	79	53.7	135	3	US-08-459-906-5
43	79	53.7	1098	1	US-07-777-715-7
44	79	53.7	1098	1	US-08-170-126-2
45	79	53.7	1098	3	US-08-954-418-2

ALIGNMENTS

RESULT 1

US-09-116-594-2

; Sequence 2, Application US/09116594

; Patent No. 6168785

; GENERAL INFORMATION:

; APPLICANT: THEZE, Jacques

; APPLICANT: ECKENBERG, Ralph

; APPLICANT: MOREAU, Jean-Louis

; APPLICANT: MAZIE, Jean-Claude

; TITLE OF INVENTION: BIOLOGICAL APPLICATIONS OF NEW PEPTIDES OF IL-2 AND

; FILE REFERENCE: 0660-0134-0

; CURRENT APPLICATION NUMBER: US/09/116.594

; CURRENT FILING DATE: 1998-07-16

; NUMBER OF SEQ ID NOS: 2

; SOFTWARE: Patent In Ver. 2.1

; SEQ ID NO 2

; LENGTH: 31

; TYPE: PRT

; ORGANISM: Artificial Sequence

; FEATURE:

; OTHER INFORMATION: Description of Artificial Sequence:peptide

US-09-116-594-2

Query Match 100.0%; Score 147; DB 4; Length 31;

Best Local Similarity 100.0%; Pred. No. 1.9e-16;

Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Oy 1 APTSSSTKKTQLEHLLLDQMLINGINN 30

|||||

Db 2 APTSSSTKKTQLEHLLLDQMLINGINN 31

RESULT 2

US-08-127-351-13

; Sequence 13, Application US/08127351

; Patent No. 5449761

; GENERAL INFORMATION:

; APPLICANT: BELINKA JF, BENJAMIN A.

; APPLICANT: COUGHLIN, DANIEL J.

; APPLICANT: ALVAREZ, VERNON L.

; APPLICANT: WOOD, RICHARD

; TITLE OF INVENTION: METAL-BINDING TARGETED POLYPEPTIDE

; NUMBER OF SEQUENCES: 56

; CORRESPONDENCE ADDRESS:

; ADDRESSEE: OBLON, SPIVAK, MCCLELLAND, MAIER &

; ADDRESSEE: NEUSTADT,

; ADDRESSEE: P.C.

; STREET: 1755 S. Jefferson Davis Highway, Suite 400

; CITY: Arlington
; STATE: Virginia
; COUNTRY: U.S.A.
; ZIP: 22202
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/127,351
; FILING DATE: 28-SEP-1993
; CLASSIFICATION: 534
; ATTORNEY/AGENT INFORMATION:
; NAME: Villacorta, Gilberto M.
; REGISTRATION NUMBER: 34,038
; REFERENCE/DOCKET NUMBER: 4980-004-44
; TELEPHONE: (703) 413-3000
; TELEFAX: (703) 413-2220
;
; INFORMATION FOR SEQ ID NO: 13:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 50 amino acids
; TYPE: amino acid
; TOPOLOGY: unknown
; MOLECULE TYPE: peptide
; US-08-127-351-13
;
; Query Match 100.0%; Score 147; DB 1; Length 50;
; Best Local Similarity 100.0%; Pred. No. 3.4e-16;
; Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
;
; QY 1 APTSSSTKKTQLEHLLDLMILNGINN 30
; Db 1 APTSSSTKKTQLEHLLDLMILNGINN 30
;
; RESULT 3
; US-08-480-367B-13
; Sequence 13, Application US/08480367B
; Patent No. 5578288
; GENERAL INFORMATION:
; APPLICANT: BELINKA Jr, BENJAMIN A.
; APPLICANT: COUGHLIN, DANIEL J.
; APPLICANT: ALVAREZ, VERNON L.
; APPLICANT: WOOD, RICHARD
; TITLE OF INVENTION: METAL-BINDING TARGETED POLYPEPTIDE
; TITLE OF INVENTION: CONSTRUCTS
; NUMBER OF SEQUENCES: 56
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: LOWE, PRICE, LeBLANC & BECKER
; STREET: 99 Canal Center Plaza, Suite 300
; CITY: Alexandria
; STATE: Virginia
; COUNTRY: U.S.A.
; ZIP: 22314
;
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/480,367B
; FILING DATE: 07-06-95
; CLASSIFICATION: 424
; ATTORNEY/AGENT INFORMATION:
; NAME: Villacorta, Gilberto M.
; REGISTRATION NUMBER: 34,038
; REFERENCE/DOCKET NUMBER: 2654-002A
; TELEPHONE: (703) 684-1111
; TELEFAX: (703) 684-1124

; TELEX:
; INFORMATION FOR SEQ ID NO: 13:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 50 amino acids
; TYPE: amino acid
; TOPOLOGY: unknown
; MOLECULE TYPE: peptide
; US-08-480-367B-13
;
; Query Match 100.0%; Score 147; DB 1; Length 50;
; Best Local Similarity 100.0%; Pred. No. 3.4e-16;
; Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
;
; QY 1 APTSSSTKKTQLEHLLDLMILNGINN 30
; Db 1 APTSSSTKKTQLEHLLDLMILNGINN 30
;
; RESULT 4
; US-08-487-221A-13
; Sequence 13, Application US/08487221A
; Patent No. 5593656
; GENERAL INFORMATION:
; APPLICANT: BELINKA Jr, BENJAMIN A.
; APPLICANT: COUGHLIN, DANIEL J.
; APPLICANT: ALVAREZ, VERNON L.
; APPLICANT: WOOD, RICHARD
; TITLE OF INVENTION: METAL-BINDING TARGETED POLYPEPTIDE
; TITLE OF INVENTION: CONSTRUCTS
; NUMBER OF SEQUENCES: 56
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: OBLON, SPIVAK, McLELLAND, MATER &
; STREET: 1755 S. Jefferson Davis Highway, Suite 400
; CITY: Arlington
; STATE: Virginia
; COUNTRY: U.S.A.
; ZIP: 22202
;
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/487,221A
; FILING DATE: 07-JUN-1995
; CLASSIFICATION: 424
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 08/127,351
; FILING DATE: 28-SEP-1993
; ATTORNEY/AGENT INFORMATION:
; NAME: Villacorta, Gilberto M.
; REGISTRATION NUMBER: 34,038
; REFERENCE/DOCKET NUMBER: 4980-004-44
; TELEPHONE: (703) 413-3000
; TELEFAX: (703) 413-2220
; TELEX: 248855 OPAT UR
; INFORMATION FOR SEQ ID NO: 13:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 50 amino acids
; TYPE: amino acid
; TOPOLOGY: unknown
; MOLECULE TYPE: peptide
; US-08-487-221A-13
;
; Query Match 100.0%; Score 147; DB 1; Length 50;
; Best Local Similarity 100.0%; Pred. No. 3.4e-16;
; Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
;
; QY 1 APTSSSTKKTQLEHLLDLMILNGINN 30
; Db 1 APTSSSTKKTQLEHLLDLMILNGINN 30

RESULT 5

US-08-480-370-13
; Sequence 13, Application US/08480370
; Patent No. 5609847
; GENERAL INFORMATION:
; APPLICANT: BELINKA JR, BENJAMIN A.
; APPLICANT: COUGHLIN, DANIEL J.
; APPLICANT: ALVAREZ, VERNON L.
; APPLICANT: WOOD, RICHARD
; TITLE OF INVENTION: METAL-BINDING TARGETED POLYPEPTIDE
; TITLE OF INVENTION: CONSTRUCTS
; NUMBER OF SEQUENCES: 56
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: OBLON, SPIVAK, MCCLELLAND, MAIER &
; ADDRESSEE: NEUSTADT,
; ADDRESSEE: P.C.
; STREET: 1755 S. Jefferson Davis Highway, Suite 400
; CITY: Arlington
; STATE: Virginia
; COUNTRY: U.S.A.
; ZIP: 22202
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/480,370
; FILING DATE:
; CLASSIFICATION: 424
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 08/127,351
; FILING DATE: 28-SEP-1993
; ATTORNEY/AGENT INFORMATION:
; NAME: Villacorta, Gilberto M.
; REGISTRATION NUMBER: 34,038
; REFERENCE/DOCKET NUMBER: 4980-004-44
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (703) 413-3000
; TELEFAX: (703) 413-2220
; TELEX: 248855 OPAT UR
; INFORMATION FOR SEQ ID NO: 13:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 50 amino acids
; TYPE: amino acid
; TOPOLOGY: unknown
; MOLECULE TYPE: peptide
; US-08-480-370-13

Query Match 100.0%; Score 147; DB 1; Length 50;
Best Local Similarity 100.0%; Pred. No. 3.4e-16;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 APTSSSTKKTKQLQLEHLLLDLQMLNGINN 30

Db 1 APTSSSTKKTKQLQLEHLLLDLQMLNGINN 30

RESULT 6

US-08-817-787-15
; Sequence 15, Application US/08817787
; Patent No. 6294353
; GENERAL INFORMATION:
; APPLICANT: Pack, Peter
; APPLICANT: Lupas, Andrei
; TITLE OF INVENTION: TARGETED HETERO-ASSOCIATION OF
; TITLE OF INVENTION: RECOMBINANT PROTEINS TO MULTI-FUNCTIONAL COMPLEXES
; NUMBER OF SEQUENCES: 36
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: FISH & NEAVE
; STREET: 1251 Avenue of the Americas

; CITY: New York
; STATE: New York
; COUNTRY: USA
; ZIP: 10020
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/817,787
; FILING DATE: 23-SEP-1997
; CLASSIFICATION: 424
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: PCT/EP95/04117
; FILING DATE:
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: EP 94 11 6558.1
; FILING DATE: 20-OCT-1994
; ATTORNEY/AGENT INFORMATION:
; NAME: Haley Jr., James F.
; REGISTRATION NUMBER: 27,794
; REFERENCE/DOCKET NUMBER: MORPHO/1
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: 212-596-9000
; TELEFAX: 212-596-9090
; INFORMATION FOR SEQ ID NO: 15:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 88 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: protein
; US-08-817-787-15

Query Match 100.0%; Score 147; DB 4; Length 88;
Best Local Similarity 100.0%; Pred. No. 6.8e-16;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 APTSSSTKKTKQLQLEHLLLDLQMLNGINN 30

Db 3 APTSSSTKKTKQLQLEHLLLDLQMLNGINN 32

RESULT 7

US-08-160-376A-5
; Sequence 5, Application US/08160376A
; Patent No. 5473049
; GENERAL INFORMATION:
; APPLICANT: Obermeier, Ranier
; APPLICANT: Gerl, Martin
; APPLICANT: Ludwig, Jurgen
; APPLICANT: Sabel, Walter
; TITLE OF INVENTION: Process For Obtaining Proinsulin
; TITLE OF INVENTION: Possessing Correctly Linked
; TITLE OF INVENTION: Cystine Bridges
; NUMBER OF SEQUENCES: 7
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Kenneth A. Genoni, Esq.
; STREET: Rt. 202-206 No. 5473049th/P.O. Box 2500
; CITY: Somerville
; STATE: New Jersey
; COUNTRY: U.S.A.
; ZIP: 08876-1258
; COMPUTER READABLE FORM:
; MEDIUM TYPE: DISKETTE, 3.5 INCH, 1.44 MB STORAGE
; COMPUTER: IBM 386
; OPERATING SYSTEM: WINDOWS 3.1
; SOFTWARE: WORDPERFECT 5.1
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/160,376A
; FILING DATE: December 1, 1993
; CLASSIFICATION: 530
; PRIOR APPLICATION DATA:

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Qy 1 APTSSSTKKTQLQLEHLLLDLQMLNGINN 30
Db 2 APTSSSTKKTQLQLEHLLLDLQMLNGINN 31

RESULT 9
US-07-800-366-1
: Sequence 1, Application US/07800366
: Patent No. 5250296
: GENERAL INFORMATION:
: APPLICANT: OOTSU, Koichiro
: TITLE OF INVENTION: IMMUNOSTIMULANT AGENT CONTAINING
: TITLE OF INVENTION: INTERLEUKIN-2 AND 5'-DEOXY-5-FLUOROURIDINE
: NUMBER OF SEQUENCES: 1
: CORRESPONDENCE ADDRESS:
: ADDRESSEE: DAVID G. CONLIN; DIKE, BRONSTEIN, ROBERTS &
: ADDRESSEE: CUSHMAN
: STREET: 130 Water Street
: CITY: Boston
: STATE: Massachusetts
: COUNTRY: US
: ZIP: 02109
: COMPUTER READABLE FORM:
: MEDIUM TYPE: Floppy disk
: COMPUTER: IBM PC compatible
: OPERATING SYSTEM: PC-DOS/MS-DOS
: SOFTWARE: PatentIn Release #1.0, Version #1.25
: CURRENT APPLICATION DATA:
: APPLICATION NUMBER: US/07/800,366
: FILING DATE: 19911127
: CLASSIFICATION: 424
: ATTORNEY/AGENT INFORMATION:
: NAME: Castle, Donald R
: REGISTRATION NUMBER: 24,220
: REFERENCE/DOCKET NUMBER: 41417(281)
: TELECOMMUNICATION INFORMATION:
: TELEPHONE: (617)523-3400
: TELEFAX: (617)523-6440
: TELEX: 200291 STRE UR
: INFORMATION FOR SEQ ID NO: 1:
: SEQUENCE CHARACTERISTICS:
: LENGTH: 133 amino acids
: TYPE: AMINO ACID
: TOPOLOGY: linear
: MOLECULE TYPE: protein
US-07-800-366-1

Query Match 100.0%; Score 147; DB 1; Length 133;
Best Local Similarity 100.0%; Pred. No. 1.le-15;
Matches 30; Conservative 0; Mismatches 0; Indels 0;

Qy 1 APTSSSTKKTQLQLEHLLLDLQMLNGINN 30
Db 1 APTSSSTKKTQLQLEHLLLDLQMLNGINN 30

RESULT 10
US-08-354-456A-5
: Sequence 5, Application US/08354456A
: Patent No. 5567611
: GENERAL INFORMATION:
: APPLICANT: Ralph, Peter
: APPLICANT: Martin, George
: APPLICANT: Platek, Michael
: APPLICANT: Larrick, James W.
: TITLE OF INVENTION: Multifunctional M-CSF Proteins and Genes
: TITLE OF INVENTION: Therefor
: NUMBER OF SEQUENCES: 9
: CORRESPONDENCE ADDRESS:
: ADDRESSEE: CHIRON CORPORATION
: STREET: Intellectual Property - R440, P.O. Box 8097
: CITY: Emeryville

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; STATE: California
; COUNTRY: U.S.A.
; ZIP: 94662-8097
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/354,456A
; FILING DATE: 12-DEC-1994
; CLASSIFICATION: 435
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US 07/995,338
; FILING DATE: 21-DEC-1992
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: McGarrigle Jr., Phillip L.
; REGISTRATION NUMBER: 31,395
; REFERENCE/DOCKET NUMBER: 750.003/32387
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (510) 601-2718
; TELEFAX: (510) 655-3542
; TELEX: n/a
; INFORMATION FOR SEQ ID NO: 5:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 133 amino acids
; TYPE: amino acid
; STRANDEDNESS: single
; TOPOLOGY: linear
; MOLECULE TYPE: protein
; US-08-354-456A-5

Query Match 100.0%; Score 147; DB 1; Length 133;
Best Local Similarity 100.0%; Pred. No. 1.le-15;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 APTSSSTKKTQLQLEHLLDLQMLNGINN 30
Db 1 APTSSSTKKTQLQLEHLLDLQMLNGINN 30

RESULT 11
US-08-225-224-3
; Sequence 3, Application US/08225224
; Patent No. 5635599
; GENERAL INFORMATION:
; APPLICANT: PASTAN, Ira
; TITLE OF INVENTION: CIRCULARLY PERMUTATED LIGANDS AND
; TITLE OF INVENTION: CIRCULARLY PERMUTED FUSION PROTEINS
; NUMBER OF SEQUENCES: 57
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Townsend and Townsend Kourie and Crew
; STREET: Steuart Street Tower, One Market Plaza
; CITY: San Francisco
; STATE: California
; COUNTRY: US
; ZIP: 94105-1493
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/225,224
; FILING DATE: 8-APR-1994
; CLASSIFICATION: 530
; ATTORNEY/AGENT INFORMATION:
; NAME: Weber, Ellen L.
; REGISTRATION NUMBER: 32,762
; REFERENCE/DOCKET NUMBER: 15280-193
; TELECOMMUNICATION INFORMATION:
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; TELEPHONE: (415) 543-9600
; TELEFAX: (415) 543-5043
; INFORMATION FOR SEQ ID NO: 3:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 133 amino acids
; TYPE: amino acid
; STRANDEDNESS: unknown
; TOPOLOGY: unknown
; MOLECULE TYPE: protein
; FEATURE:
; NAME/KEY: Protein
; LOCATION: 1..133
; OTHER INFORMATION: /label= IL2
; US-08-225-224-3

Query Match 100.0%; Score 147; DB 1; Length 133;
Best Local Similarity 100.0%; Pred. No. 1.le-15;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 APTSSSTKKTQLQLEHLLDLQMLNGINN 30
Db 1 APTSSSTKKTQLQLEHLLDLQMLNGINN 30

RESULT 12
US-08-318-193-89
; Sequence 89, Application US/08318193
; Patent No. 5641663
; GENERAL INFORMATION:
; APPLICANT: GARVIN, Robert T.
; APPLICANT: MALEK, Lawrence T.
; TITLE OF INVENTION: AN EXPRESSION SYSTEM FOR THE SECRETION
; TITLE OF INVENTION: OF BIOACTIVE HUMAN GRANULOCYTE MACROPHAGE COLONY
; TITLE OF INVENTION: STIMULATING FACTOR (GM-CSF) AND OTHER HETEROLOGOUS
; NUMBER OF SEQUENCES: 91
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Foley & Lardner
; STREET: 1800 Diagonal Road, Suite 500
; CITY: Alexandria
; STATE: Virginia
; COUNTRY: USA
; ZIP: 22313-0299
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.25
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/318,193
; FILING DATE:
; CLASSIFICATION: 435
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: US/07/935,314
; FILING DATE:
; APPLICATION NUMBER: US 07/224,568
; ATTORNEY/AGENT INFORMATION:
; NAME: BENT, Stephen A.
; REGISTRATION NUMBER: 29,768
; REFERENCE/DOCKET NUMBER: 18740/116 CACO
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (703) 836-9300
; TELEFAX: (703) 883-4109
; TELEX: 899149
; INFORMATION FOR SEQ ID NO: 89:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 133 amino acids
; TYPE: amino acid
; TOPOLOGY: linear
; MOLECULE TYPE: protein
; US-08-318-193-89

Query Match 100.0%; Score 147; DB 1; Length 133;
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Best Local Similarity 100.0%; Pred. No. 1.1e-15;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 APTSSSTKKTQLEHLLDQMILNGINN 30
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Db 1 APTSSSTKKTQLEHLLDQMILNGINN 30

RESULT 13

US-08-284-393B-1
; Sequence 1, Application US/08284393B
; Patent No. 5696234
; GENERAL INFORMATION:
; APPLICANT: Zurawski, Sandra M.
; APPLICANT: Zurawski, Gerard
; TITLE OF INVENTION: MUTINS OF MAMMALIAN CYTOKINES
; NUMBER OF SEQUENCES: 16
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: DNAX Research Institute
; STREET: 901 California Avenue
; CITY: Palo Alto
; STATE: California
; COUNTRY: USA
; ZIP: 94304-1104
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/284,393B
; FILING DATE: 01-AUG-1994
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Ching, Edwin P.
; REGISTRATION NUMBER: 34,090
; REFERENCE/DOCKET NUMBER: DX0389
; TELEPHONE: 415-852-9196
; TELEFAX: 415-496-1200
; INFORMATION FOR SEQ ID NO: 1:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 133 amino acids
; TYPE: amino acid
; STRANDEDNESS: single
; TOPOLOGY: linear
; MOLECULE TYPE: peptide
; US-08-284-393B-1

Query Match 100.0%; Score 147; DB 1; Length 133;
Best Local Similarity 100.0%; Pred. No. 1.1e-15;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 APTSSSTKKTQLEHLLDQMILNGINN 30
|||||
Db 1 APTSSSTKKTQLEHLLDQMILNGINN 30

RESULT 14

US-08-284-393B-2
; Sequence 2, Application US/08284393B
; Patent No. 5696234
; GENERAL INFORMATION:
; APPLICANT: Zurawski, Sandra M.
; APPLICANT: Zurawski, Gerard
; TITLE OF INVENTION: MUTINS OF MAMMALIAN CYTOKINES
; NUMBER OF SEQUENCES: 16
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: DNAX Research Institute
; STREET: 901 California Avenue
; CITY: Palo Alto
; STATE: California
; COUNTRY: USA
; ZIP: 94304-1104
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/284,393B
; FILING DATE: 01-AUG-1994
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Ching, Edwin P.
; REGISTRATION NUMBER: 34,090
; REFERENCE/DOCKET NUMBER: DX0389
; TELEPHONE: 415-852-9196
; TELEFAX: 415-496-1200
; INFORMATION FOR SEQ ID NO: 1:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 133 amino acids
; TYPE: amino acid
; STRANDEDNESS: single
; TOPOLOGY: linear
; MOLECULE TYPE: peptide
; US-08-284-393B-1

Query Match 100.0%; Score 147; DB 1; Length 133;
Best Local Similarity 100.0%; Pred. No. 1.1e-15;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 APTSSSTKKTQLEHLLDQMILNGINN 30
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Db 1 APTSSSTKKTQLEHLLDQMILNGINN 30

RESULT 15

US-08-284-393B-3
; Sequence 3, Application US/08284393B
; Patent No. 5696234
; GENERAL INFORMATION:
; APPLICANT: Zurawski, Sandra M.
; APPLICANT: Zurawski, Gerard
; TITLE OF INVENTION: MUTINS OF MAMMALIAN CYTOKINES
; NUMBER OF SEQUENCES: 16
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: DNAX Research Institute
; STREET: 901 California Avenue
; CITY: Palo Alto
; STATE: California
; COUNTRY: USA
; ZIP: 94304-1104
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/284,393B
; FILING DATE: 01-AUG-1994
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Ching, Edwin P.
; REGISTRATION NUMBER: 34,090
; REFERENCE/DOCKET NUMBER: DX0389
; TELEPHONE: 415-852-9196
; TELEFAX: 415-496-1200
; INFORMATION FOR SEQ ID NO: 3:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 133 amino acids
; TYPE: amino acid
; STRANDEDNESS: single
; TOPOLOGY: linear
; US-08-284-393B-2

ZIP: 94304-1104
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/284,393B
; FILING DATE: 01-AUG-1994
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Ching, Edwin P.
; REGISTRATION NUMBER: 34,090
; REFERENCE/DOCKET NUMBER: DX0389
; TELEPHONE: 415-852-9196
; TELEFAX: 415-496-1200
; INFORMATION FOR SEQ ID NO: 2:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 133 amino acids
; TYPE: amino acid
; STRANDEDNESS: single
; TOPOLOGY: linear
; MOLECULE TYPE: peptide
; US-08-284-393B-2

Query Match 100.0%; Score 147; DB 1; Length 133;
Best Local Similarity 100.0%; Pred. No. 1.1e-15;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 APTSSSTKKTQLEHLLDQMILNGINN 30
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Db 1 APTSSSTKKTQLEHLLDQMILNGINN 30

RESULT 15

US-08-284-393B-3
; Sequence 3, Application US/08284393B
; Patent No. 5696234
; GENERAL INFORMATION:
; APPLICANT: Zurawski, Sandra M.
; APPLICANT: Zurawski, Gerard
; TITLE OF INVENTION: MUTINS OF MAMMALIAN CYTOKINES
; NUMBER OF SEQUENCES: 16
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: DNAX Research Institute
; STREET: 901 California Avenue
; CITY: Palo Alto
; STATE: California
; COUNTRY: USA
; ZIP: 94304-1104
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/284,393B
; FILING DATE: 01-AUG-1994
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Ching, Edwin P.
; REGISTRATION NUMBER: 34,090
; REFERENCE/DOCKET NUMBER: DX0389
; TELEPHONE: 415-852-9196
; TELEFAX: 415-496-1200
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; SEQUENCE CHARACTERISTICS:
; LENGTH: 133 amino acids
; TYPE: amino acid
; STRANDEDNESS: single
; TOPOLOGY: linear
; US-08-284-393B-2

Query Match 100.0%; Score 147; DB 1; Length 133;
Best Local Similarity 100.0%; Pred. No. 1.1e-15;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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RESULT 15

US-08-284-393B-3
; Sequence 3, Application US/08284393B
; Patent No. 5696234
; GENERAL INFORMATION:
; APPLICANT: Zurawski, Sandra M.
; APPLICANT: Zurawski, Gerard
; TITLE OF INVENTION: MUTINS OF MAMMALIAN CYTOKINES
; NUMBER OF SEQUENCES: 16
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: DNAX Research Institute
; STREET: 901 California Avenue
; CITY: Palo Alto
; STATE: California
; COUNTRY: USA
; ZIP: 94304-1104
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatible
; OPERATING SYSTEM: PC-DOS/MS-DOS
; SOFTWARE: PatentIn Release #1.0, Version #1.30
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/08/284,393B
; FILING DATE: 01-AUG-1994
; CLASSIFICATION: 435
; ATTORNEY/AGENT INFORMATION:
; NAME: Ching, Edwin P.
; REGISTRATION NUMBER: 34,090
; REFERENCE/DOCKET NUMBER: DX0389
; TELEPHONE: 415-852-9196
; TELEFAX: 415-496-1200
; INFORMATION FOR SEQ ID NO: 3:
; SEQUENCE CHARACTERISTICS:
; LENGTH: 133 amino acids
; TYPE: amino acid
; STRANDEDNESS: single
; TOPOLOGY: linear
; US-08-284-393B-2

; MOLECULE TYPE: peptide

MOLECULE 11
US-08-284-393B-3

Query Match 100.08; Score 147; DB 1; Length 133;

Query Match 100.0%; Score 147; DF 1;
Best Local Similarity 100.0%; Pred. No. 1.1e-15;

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BEST LOCAL SIMILARITY 100.00%, FREQ. NO. 1, RE 15,
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

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Db 1 APTSSSTKKTQLQLEHLLLDLQMLNGINN 30

Search completed: October 21, 2002, 09:50:15

Job time : 13 secs

GenCore version 5.1.3
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OM protein - protein search, using sw model

Run on: October 21, 2002, 09:47:01 ; Search time 10 Seconds
(without alignments)
116.159 million cell updates/sec

Title: US-09-720-828A-4
Perfect score: 147
Sequence: 1 APTSSSTKKTQLQLEHLLDLQMLNGINN 30

Scoring table: BLOSUM62
Gapop 10.0 , Gapext 0.5

Searched: 105224 seqs, 38719550 residues

Total number of hits satisfying chosen parameters: 105224

Minimum DB seq length: 0
Maximum DB seq length: 2000000000
Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

Database : SwissProt_40:*

Pred. No. is the number of results predicted by chance to have a
score greater than or equal to the score of the result being printed,
and is derived by analysis of the total score distribution.

SUMMARIES				Description	
Result No.	Score	Query Match %	Length DB ID		
1	147	100.0	153 1	IL2_HUMAN	P01585 homo sapien
2	147	100.0	154 1	IL2_MACFA	Q29615 macaca fasc
3	147	100.0	154 1	IL2_MACMO	P51498 macaca mula
4	142	96.6	154 1	IL2_CERTO	P46649 cercocebus
5	116	78.9	154 1	IL2_MIRAN	O62641 mirounga an
6	114	77.6	154 1	IL2_FELCA	Q07885 felis silve
7	107.5	73.1	155 1	IL2_CANFA	Q29416 canis famil
8	107	72.8	153 1	IL2_RABIT	O77620 oryctolagus
9	97	66.0	155 1	IL2_RAT	P17108 rattus norv
10	96	65.3	154 1	IL2_PIG	P26891 sus scrofa
11	95	64.6	155 1	IL2_MERUN	Q08081 merionius un
12	92	62.6	149 1	IL2_HORSE	P37997 equus cabal
13	88	59.9	152 1	IL2_ORCOR	O97513 orcinus orc
14	79	53.7	155 1	IL2_BOVIN	P05016 bos taurus
15	79	53.7	155 1	IL2_CAPHI	P36835 capra hircu
16	79	53.7	155 1	IL2_SHEEP	P19114 ovis aries
17	79	53.7	162 1	IL2_CEREL	P51747 cervus elap
18	64.5	43.9	166 1	IL2_MUSSP	Q08667 mus spretus
19	64	43.5	169 1	IL2_MOUSE	P04351 mus musculu
20	54	36.7	357 1	AAAA_EMENI	P21133 emerlicella
21	51	34.7	627 1	FLGK_BORBU	P70859 borrelia bu
22	50	34.0	1046 1	POL_SIVAG	P27980 simian immu
23	48	32.7	155 1	YHCH_HAEIN	P44583 haemophilus
24	48	32.7	189 1	Y064_METJA	O60376 methanococc
25	48	32.7	1061 1	POL_SIVAT	P05895 simian immu
26	47.5	32.3	938 1	PM15_CHLPN	Q92883 chlamydia p
27	46	31.3	293 1	Y347_HELPJ	O92ma1 helicobacte
28	46	31.3	1612 1	DNM1_PARLI	Q27746 paracentrot
29	45	30.6	333 1	A85C_MYLE	Q05862 mycobacteri
30	45	30.6	870 1	POL_JSVR	P31623 sheep pulmo
31	45	30.6	903 1	MSPI_SCHPO	P87320 schizosacch
32	45	30.6	1158 1	ALAI_ARATH	P98204 arabidopsis
33	44.5	30.3	511 1	D0P1_DROME	P41596 drosophilla

34	44.5	30.3	741	1	RNSA_HUMAN	Q05823 homo sapien
35	44	29.9	81	1	EX7S_PASMU	O9cna0 pasteurella
36	44	29.9	357	1	CAD4_TOBAC	P30359 nicotiana t
37	44	29.9	357	1	CAD9_TOBAC	P30360 nicotiana t
38	44	29.9	368	1	LEU3_NEUCR	P34738 neurospora
39	44	29.9	474	1	SYFA_ARCFU	O28324 archaeoglob
40	44	29.9	625	1	XYNA_PIRSP	O12667 piromyces s
41	44	29.9	627	1	YHAB_YEAST	P38750 saccharomyc
42	44	29.9	715	1	LCCL_LACIA	Q9c358 lactococcus
43	44	29.9	943	1	YLW5_CAEEL	P34408 caenorhabdi
44	44	29.9	1019	1	POL_SIVS4	P12502 simian immu
45	44	29.9	1034	1	ACRF_ECOLI	P24181 escherichia

ALIGNMENTS

RESULT 1					
IL2_HUMAN	IL2_HUMAN	STANDARD;	PRT;	153 AA.	
AC	P01585;				
DT	21-JUL-1986 (Rel. 01, Created)				
DT	21-JUL-1986 (Rel. 01, Last sequence update)				
DT	01-MAR-2002 (Rel. 41, Last annotation update)				
DE	Interleukin-2 precursor (IL-2) (T-cell growth factor) (TCGF)				
DE	(Aldesleukin).				
GN	IL2.				
OS	Homo sapiens (Human), and				
OS	Hylobates lar (Common gibbon).				
OC	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;				
OC	Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.				
OX	NCBI_TaxID=9606; 9580;				
RN	[J]				
RP	SEQUENCE FROM N.A.				
RC	SPECIES=Human;				
RX	MEDLINE=84247353; PubMed=6330695;				
RA	Holbrook N.J., Lieber M., Crabtree G.R.;				
RT	"DNA sequence of the 5' flanking region of the human interleukin 2				
RT	gene: homologues with adult T-cell leukemia virus.";				
RL	Nucleic Acids Res. 12:5005-5013(1984).				
RN	[2]				
RP	SEQUENCE FROM N.A.				
RC	SPECIES=Human;				
RX	MEDLINE=83167472; PubMed=6403867;				
RA	Taniguchi T., Matsui H., Fujita T., Takaoka C., Kashima N.,				
RA	Yoshimoto R., Hamuro J.;				
RT	"Structure and expression of a cloned cDNA for human interleukin-2.";				
RT	Nature 302:305-310(1983).				
RN	[3]				
RP	SEQUENCE FROM N.A.				
RC	SPECIES=Human;				
RX	MEDLINE=84023840; PubMed=6312994;				
RA	Maeda S., Nishino N., Obaru K., Mita S., Nomiya H., Shimada K.,				
RA	Fujimoto K., Teranishi T., Hirano T., Onoue K.;				
RT	"Cloning of interleukin 2 mRNAs from human tonsils.";				
RL	Biochem. Biophys. Res. Commun. 115:1040-1047(1983).				
RN	[4]				
RP	SEQUENCE FROM N.A.				
RC	SPECIES=Human;				
RX	MEDLINE=83246551; PubMed=6306584;				
RA	Devos R., Plaetnick G., Cheroutre H., Simons G., Degraeve W.,				
RA	Tavernier J., Remaut E., Fiers W.;				
RT	"Molecular cloning of human interleukin 2 cDNA and its expression in				
RT	E. coli.";				
RL	Nucleic Acids Res. 11:4307-4323(1983).				
RN	[5]				
RP	SEQUENCE FROM N.A.				
RC	SPECIES=Human;				
RX	MEDLINE=84170356; PubMed=6608729;				
RA	Holbrook N.J., Smith K.A., Fornace A.J. Jr., Comeau C.M.,				
RA	Wiskocil R.L., Crabtree G.R.;				
RT	"T-cell growth factor: complete nucleotide sequence and organization				
RT	of the gene in normal and malignant cells.";				

RL Proc. Natl. Acad. Sci. U.S.A. 81:1634-1638(1984).
RN [6]
RN SEQUENCE FROM N.A.
RC SPECIES=Human;
RX MEDLINE=84170243; PubMed=6324170;
RA Fujita T., Takeoka C., Matsui H., Taniguchi T.;
RT "Structure of the human interleukin 2 gene.";
RN Proc. Natl. Acad. Sci. U.S.A. 80:7437-7441(1983).
RN [7]
RN SEQUENCE FROM N.A.
RC SPECIES=Human;
RX MEDLINE=95239150; PubMed=7722480;
RA Elzenberg O., Faber-Elman A., Lotan M., Schwartz M.;
RT "Interleukin-2 transcripts in human and rodent brains: possible
RN expression by astrocytes.";
RN J. Neurochem. 64:1928-1936(1995).
RN [8]
RN SEQUENCE FROM N.A.
RC SPECIES=Human;
RX MEDLINE=96422299; PubMed=8824916;
RA Chernicky C.L., Tan H., Burrell P., Ilan J., Ilan J.;
RT "Sequence of interleukin-2 isolated from human placental poly A+ RNA:
RN possible role in maintenance of fetal allograft.";
RN Mol. Reprod. Dev. 43:180-186(1996).
RN [9]
RN SEQUENCE OF 21-153 FROM N.A.
RC SPECIES=Human;
RX MEDLINE=89062420; PubMed=3264184;
RA Weir M.P., Chaplin M.A., Wallace D.M., Dykes C.W., Hobden A.N.;
RT "Structure-activity relationships of recombinant human interleukin
RN 2.";
RN Biochemistry 27:6883-6892(1988).
RN [10]
RN SEQUENCE OF 1-69 FROM N.A.
RC SPECIES=Human;
RX MEDLINE=87064618; PubMed=3491296;
RA Siebenlist U., Durand D.B., Bressler P., Holbrook N.J., Norris C.A.,
RT Kamoun M., Kant J.A., Crabtree G.R.;
RT "Promoter region of interleukin-2 gene undergoes chromatin structure
RN changes and confers inducibility on chloramphenicol acetyltransferase
RN gene during activation of T cells.";
RN Mol. Cell. Biol. 6:3042-3049(1986).
RN [11]
RN SEQUENCE OF 1-68 FROM N.A.
RC SPECIES=Human;
RA Nishino N., Obaru K., Maeda S., Shimada K., Onoue K.;
RT "Organization of the DNA regions flanking the human interleukin 2
RN gene.";
RN Biomed. Res. 6:197-205(1985).
RN [12]
RN SEQUENCE OF 21-153, DISULFIDE BOND, AND CARBOHYDRATE-LINKAGE SITE.
RC SPECIES=Human;
RX MEDLINE=85038540; PubMed=6333684;
RA Robb R.J., Kutny R.M., Panico M., Morris H.R., Chowdhry V.;
RT "Amino acid sequence and post-translational modification of human
RN interleukin 2.";
RN Proc. Natl. Acad. Sci. U.S.A. 81:6486-6490(1984).
RN [13]
RN CARBOHYDRATE-LINKAGE SITE.
RC SPECIES=Human;
RX MEDLINE=90008901; PubMed=2793860;
RA Conradt H.S., Nimetz M., Dittmar K.E.J., Lindenmaier W., Hoppe J.,
RA Hauser H.;
RT "Expression of human interleukin-2 in recombinant baby hamster
RN kidney, Itk-, and Chinese hamster ovary cells. Structure of O-linked
RN carbohydrate chains and their location within the polypeptide.";
RN J. Biol. Chem. 264:17368-17373(1989).
RN [14]
RN SEQUENCE FROM N.A.
RC SPECIES=Human;
RX MEDLINE=86042650; PubMed=3877307;
RA Chen S.J., Holbrook N.J., Mitchell K.F., Vallone C.A.,
RA Greengard J.S., Crabtree G.R., Lin Y.;

RT "A viral long terminal repeat in the interleukin 2 gene of a cell
RN line that constitutively produces interleukin 2.";
RN Proc. Natl. Acad. Sci. U.S.A. 82:7284-7288(1985).
RN [15]
RN X-RAY CRYSTALLOGRAPHY (3.0 ANGSTROMS).
RC SPECIES=Human;
RX MEDLINE=88070646; PubMed=3500515;
RA Brandhuber B.J., Boone T., Kenney W.C., McKay D.B.;
RT "Three-dimensional structure of interleukin-2.";
RN Science 238:1707-1709(1987).
RN [16]
RN X-RAY CRYSTALLOGRAPHY.
RC MEDLINE=92335891; PubMed=1631562;
RA Bazan J.F.;
RT "Unravelling the structure of IL-2.";
RN Science 257:410-412(1992).
RN [17]
RN RESPONSE TO ABOVE LETTER.
RA McKay D.B.;
RN Science 257:412-413(1992).
RN [18]
RN STRUCTURE BY NMR.
RX MEDLINE=92379010; PubMed=1510960;
RA Mott H.R., Driscoll P.C., Boyd J., Cooke R.M., Weir M.P.,
RA Campbell I.D.;
RT "Secondary structure of human interleukin 2 from 3D heteronuclear NMR
RN experiments.";
RN Biochemistry 31:7741-7744(1992).
RN [19]
RN 3D-STRUCTURE MODELING.
RX MEDLINE=95111955; PubMed=7529123;
RA Bamorough P., Hedgecock C.J., Richards W.G.;
RT "The interleukin-2 and interleukin-4 receptors studied by molecular
RN modelling.";
RN Structure 2:839-851(1994).
RN [20]
RN FUNCTION: PRODUCED BY T-CELLS IN RESPONSE TO ANTIGENIC OR
CC MITOGENIC STIMULATION, THIS PROTEIN IS REQUIRED FOR T-CELL
CC PROLIFERATION AND OTHER ACTIVITIES CRUCIAL TO REGULATION OF THE
CC IMMUNE RESPONSE. CAN STIMULATE B CELLS, MONOCYTES, LYMPHOKINE-
CC ACTIVATED KILLER CELLS, NATURAL KILLER CELLS, AND GLIOMA CELLS.
CC [21] SUBCELLULAR LOCATION: Secreted.
CC [22] DISEASE: A FORM OF T-CELL ACUTE LYMPHOBLASTIC LEUKEMIA (T-ALL) IS
CC CHARACTERIZED BY A CHROMOSOMAL TRANSLOCATION T(4;16)(Q26;P13)
CC WHICH INVOLVES IL2 AND BCMA.
CC [23] PHARMACEUTICAL: Available under the name Proleukin (Chiron). Used
CC in patients with renal cell carcinoma or metastatic melanoma.
CC [24] SIMILARITY: BELONGS TO THE IL-2 FAMILY.
CC [25] DATABASE: NAME=ReD Systems' cytokine source book: IL2;
CC WWW="http://www.rndsystems.com/asp/g_sitebuilder.asp?bodyid=206".
CC -----
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CC -----
CC EMBL: J00264; A048509.1; -
CC EMBL: X01586; CAA25742.1; -
CC EMBL: V00564; CAA23827.1; -
CC EMBL: X00695; CAA25292.1; -
CC EMBL: K02056; AAA98792.1; -
CC EMBL: M13879; AAA59141.1; -
CC EMBL: K03174; AAA35453.1; -
CC EMBL: S77834; AAD14263.2; -
CC EMBL: S82692; AAB46883.1; -
CC EMBL: M22005; AAA59140.1; ALT_INIT.
CC EMBL: M11144; AAA35454.1; -
CC EMBL: M33199; AAA59139.1; -
CC EMBL: A14844; CAA01199.1; -
CC PIR: A01849; ICH02.
CC PIR: A94067; ICH02.


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Query Match      100.0%; Score 147; DB 1; Length 153;
Best Local Similarity 100.0%; Pred. No. 2.5e-15;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 APTSSSTKKTQLEHLLLDQMILNGINN 30
DB 21 APTSSSTKKTQLEHLLLDQMILNGINN 50

RESULT 2
IL2_MACFA
ID IL2_MACFA STANDARD; PRT; 154 AA.
AC Q29615;
DT 01-NOV-1997 (Rel. 35, Created)
DT 01-NOV-1997 (Rel. 35, Last sequence update)
DT 16-OCT-2001 (Rel. 40, Last annotation update)
DE Interleukin-2 precursor (IL-2) (T-cell growth factor) (TCGF).
GN IL2.
OS Macaca fascicularis (Crab eating macaque) (Cynomolgus monkey).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Cercopithecoidea;
OC Cercopithecoidea; Macaca.
OX NCBI_TaxID=9541;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=Peripheral blood;
RA Yabe M., Matsura Y., Tatsumi M.;
RL Submitted (JUL-1995) to the EMBL/GenBank/DBJ databases.
CC -!- FUNCTION: PRODUCED BY T-CELLS IN RESPONSE TO ANTIGENIC OR
CC MITOGENIC STIMULATION. THIS PROTEIN IS REQUIRED FOR T-CELL
CC PROLIFERATION AND OTHER ACTIVITIES CRUCIAL TO REGULATION OF THE
CC IMMUNE RESPONSE. CAN STIMULATE B CELLS, MONOCYTES, LYMPHOKINE-
CC ACTIVATED KILLER CELLS, NATURAL KILLER CELLS, AND GLIOMA CELLS (BY
CC SIMILARITY).
CC -!- SUBCELLULAR LOCATION: Secreted.
CC -!- SIMILARITY: BELONGS TO THE IL-2 FAMILY.
CC
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CC
CC EMBL: D63352; BAA09676.1; -
CC HSP: P01585; 3INK.
CC InterPro: IPR000779; Interleukin-2.
CC Pfam: PF00715; IL2; 1.
CC ProDom: PD003649; Interleukin-2; 1.
CC SMART: SM00189; IL2; 1.
CC PROSITE: PS00424; INTERLEUKIN_2; 1.
CC Cytokine; Glycoprotein; Immune response; Signal; Growth factor;
KW T-cell.
FT SIGNAL. 1 20 BY SIMILARITY.
FT CHAIN 21 154 INTERLEUKIN-2.
FT CARBOHYD 23 23 O-LINKED (GALNAc... ) (BY SIMILARITY).
FT DISULFID 78 126 BY SIMILARITY.
FT SEQUENCE 154 AA; 17686 MW; 7853FE624A564A49 CRC64;

Query Match      100.0%; Score 147; DB 1; Length 154;
Best Local Similarity 100.0%; Pred. No. 2.5e-15;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 APTSSSTKKTQLEHLLLDQMILNGINN 30
DB 21 APTSSSTKKTQLEHLLLDQMILNGINN 50

RESULT 3
IL2_MACMU
ID IL2_MACMU STANDARD; PRT; 154 AA.
AC P51498;
DT 01-OCT-1996 (Rel. 34, Created)
DT 01-OCT-1996 (Rel. 34, Last sequence update)
DT 16-OCT-2001 (Rel. 40, Last annotation update)
DE Interleukin-2 precursor (IL-2) (T-cell growth factor) (TCGF).
GN IL2.
OS Macaca mulatta (Rhesus macaque), and
OS Macaca nemestrina (Pig-tailed macaque).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Primates; Catarrhini; Cercopithecoidea;
OC Cercopithecoidea; Macaca.
OX NCBI_TaxID=9544, 9545;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=Blood;
RA Villinger F.J., Brar S.S., Mayne A.E., Chikkala N., Ansari A.A.;
RL Submitted (JUL-1995) to the EMBL/GenBank/DBJ databases.
CC -!- FUNCTION: PRODUCED BY T-CELLS IN RESPONSE TO ANTIGENIC OR
CC MITOGENIC STIMULATION. THIS PROTEIN IS REQUIRED FOR T-CELL
CC PROLIFERATION AND OTHER ACTIVITIES CRUCIAL TO REGULATION OF THE
CC IMMUNE RESPONSE. CAN STIMULATE B CELLS, MONOCYTES, LYMPHOKINE-
CC ACTIVATED KILLER CELLS, NATURAL KILLER CELLS, AND GLIOMA CELLS (BY
CC SIMILARITY).
CC -!- SUBCELLULAR LOCATION: Secreted.
CC -!- SIMILARITY: BELONGS TO THE IL-2 FAMILY.
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CC
CC EMBL: U19847; AAB60400.1; -
CC HSP: P01585; 3INK.
CC InterPro: IPR000779; Interleukin-2.
CC Pfam: PF00715; IL2; 1.
CC ProDom: PD003649; Interleukin-2; 1.
CC SMART: SM00189; IL2; 1.
CC PROSITE: PS00424; INTERLEUKIN_2; 1.
CC Cytokine; Glycoprotein; Immune response; Signal; Growth factor;
KW T-cell.
FT SIGNAL. 1 20 BY SIMILARITY.
FT CHAIN 21 154 INTERLEUKIN-2.
FT CARBOHYD 23 23 O-LINKED (GALNAc... ) (BY SIMILARITY).
FT DISULFID 78 126 BY SIMILARITY.
FT SEQUENCE 154 AA; 17685 MW; 6AEBAA480F204BA49 CRC64;

Query Match      100.0%; Score 147; DB 1; Length 154;
Best Local Similarity 100.0%; Pred. No. 2.5e-15;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 APTSSSTKKTQLEHLLLDQMILNGINN 30
DB 21 APTSSSTKKTQLEHLLLDQMILNGINN 50

RESULT 4
IL2_CERTO
ID IL2_CERTO STANDARD; PRT; 154 AA.
AC P46649;
DT 01-NOV-1995 (Rel. 32, Created)
DT 01-NOV-1995 (Rel. 32, Last sequence update)
DT 16-OCT-2001 (Rel. 40, Last annotation update)
DE Interleukin-2 precursor (IL-2) (T-cell growth factor) (TCGF).
GN IL2.

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CC CC -!- SUBCELLULAR LOCATION: Secreted.
CC CC -!- SIMILARITY: BELONGS TO THE IL-2 FAMILY.
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CC -----
CC CC EMBL; L19402; AAA02865.1; -.
CC CC EMBL; L25408; AAA51431.1; -.
CC CC PIR; JN0698; JN0698.
CC CC HSP; P01585; 3INK.
CC CC InterPro; IPR000779; Interleukin-2.
CC CC Pfam; PF00715; IL2; 1.
CC CC PRINTS; PR00265; INTERLEUKIN2.
CC CC PRODOM; PD003649; Interleukin-2; 1.
CC CC SMART; SM00189; IL2; 1.
CC CC PROSITE; PS00424; INTERLEUKIN_2; 1.
CC CC Cytokine; Glycoprotein; Immune response; Signal; Growth factor;
CC T-cell.
CC CC SIGNAL 1 20 BY SIMILARITY.
CC CC CHAIN 21 154 INTERLEUKIN-2.
CC CC DISULFID 78 126 BY SIMILARITY.
CC CC CARBOHYD 111 111 N-LINKED (GLCNAC. .) (POTENTIAL).
CC CC CONFLICT 3 4 KI -> RM (IN REF. 2).
CC CC CONFLICT 150 150 F -> I (IN REF. 2).
CC CC SEQUENCE 154 AA; 17653 MW; 2E71E3BD8B9665EF CRC64;

Query Match 77.6%; Score 114; DB 1; Length 154;
Best Local Similarity 73.3%; Pred. No. 2.6e-10;
Matches 22; Conservative 5; Mismatches 3; Indels 0; Gaps 0;

OY 1 APYSSSTKTKQLQLEHLLLDQLMLNGINN 30
II IIIII:II III IIIII:II IIII:
DB 21 APASSSTKTEQQOQLLDRLLLGVNN 50

RESULT 7
IL2_CANFA STANDARD; PRT; 155 AA.
AC Q29416; Q28249;
DT 15-JUL-1998 (Rel. 36, Created)
DT 15-JUL-1998 (Rel. 36, Last sequence update)
DT 30-MAY-2000 (Rel. 39, Last annotation update)
DE Interleukin-2 precursor (IL-2) (T-cell growth factor) (TCGF).
GN IL2.
OS Canis familiaris (Dog).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
OX NCBI_TaxID=9615;
[1]
SEQUENCE FROM N.A.
RC STRAIN-XRED21/12/93; TISSUE-Lymph node;
RX MEDLINE-95337423; PubMed-7612930;
RA Dunham S.P.; Argyle D.J.; Onions D.E.;
RT "The isolation and sequence of canine interleukin-2.";
RL DNA Seq. 5:177-180(1995).
[2]
SEQUENCE FROM N.A.
RC MEDLINE-96016696; PubMed-8571541;
RX Sornberg R.L.; Pullen R.P.; Casal M.L.; Patterson D.F.; Felsburg P.J.;
RA Henthorn P.S.;
RT "A single nucleotide insertion in the canine interleukin-2 receptor
gamma chain results in x-linked severe combined immunodeficiency
disease.";
RL Vet. Immunol. Immunopathol. 47:203-213(1995).
[3]
SEQUENCE FROM N.A.
RC STRAIN-BEAGLE; TISSUE-Spleen;
RX MEDLINE-95347614; PubMed-7622066;

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RA RA Knapp D.W., Williams J.S., Andrisani O.M.;
RL RL "Cloning of the canine interleukin-2-encoding cDNA.";
CC CC Gene 159:281-283(1995).
CC CC -!- FUNCTION: PRODUCED BY T-CELLS IN RESPONSE TO ANTIGENIC OR
CC MITOGENIC STIMULATION, THIS PROTEIN IS REQUIRED FOR T-CELL
CC PROLIFERATION AND OTHER ACTIVITIES CRUCIAL TO REGULATION OF THE
CC IMMUNE RESPONSE. CAN STIMULATE B CELLS, MONOCYTES, LYMPHOKINE-
CC ACTIVATED KILLER CELLS, NATURAL KILLER CELLS, AND GLIOMA CELLS.
CC CC SUBCELLULAR LOCATION: Secreted.
CC CC -!- SIMILARITY: BELONGS TO THE IL-2 FAMILY.
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CC -----
CC CC EMBL; D30710; BAA06378.1; -.
CC CC EMBL; U28141; AAA68969.1; -.
CC CC EMBL; U11689; AAA75360.1; -.
CC CC HSP; P01585; 3INK.
CC CC InterPro; IPR000779; Interleukin-2.
CC CC Pfam; PF00715; IL2; 1.
CC CC PRINTS; PR00265; INTERLEUKIN2.
CC CC PRODOM; PD003649; Interleukin-2; 1.
CC CC SMART; SM00189; IL2; 1.
CC CC PROSITE; PS00424; INTERLEUKIN_2; 1.
CC CC Cytokine; Glycoprotein; Immune response; Signal; Growth factor;
CC T-cell.
CC CC SIGNAL 1 20 BY SIMILARITY.
CC CC CHAIN 21 155 INTERLEUKIN-2.
CC CC CARBOHYD 112 112 O-LINKED (GLCNAC. .) (BY SIMILARITY).
CC CC DISULFID 79 127 N-LINKED (GLCNAC. .) (POTENTIAL).
CC CC CONFLICT 4 4 BY SIMILARITY.
CC CC CONFLICT 37 37 M -> I (IN REF. 3).
CC CC CONFLICT 151 151 Q -> R (IN REF. 3).
CC CC CONFLICT 154 154 F -> Y (IN REF. 3).
CC CC SEQUENCE 155 AA; 17668 MW; DL23E486B7F4ACID CRC64;

Query Match 73.18%; Score 107.5; DB 1; Length 155;
Best Local Similarity 71.0%; Pred. No. 2.6e-09;
Matches 22; Conservative 6; Mismatches 2; Indels 1; Gaps 1;

OY 1 APYSSSTKTKQLQLEHLLLDQLMLNGINN 30
II IIIII:II III IIIII:II IIII:
DB 21 APYSSSTKTEQQOQLLDRLLLGVNN 51

RESULT 8
IL2_RABIT STANDARD; PRT; 153 AA.
AC O77620;
DT 15-JUL-1999 (Rel. 38, Created)
DT 15-JUL-1999 (Rel. 38, Last sequence update)
DT 16-OCT-2001 (Rel. 40, Last annotation update)
DE Interleukin-2 precursor (IL-2) (T-cell growth factor) (TCGF).
GN IL2.
OS Oryctolagus cuniculus (Rabbit).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Lagomorpha; Leporidae; Oryctolagus.
OX NCBI_TaxID=9986;
[1]
SEQUENCE FROM N.A.
RC TISSUE-Lymph node;
RA Kerr P.J.; Lei S.; Hardy C.; Perkins H.D.;
RT "Complete cDNA sequence of rabbit interleukin-2.";
RL Submitted (MAY-1998) to the EMBL/GenBank/DBJ databases.
CC CC -!- FUNCTION: PRODUCED BY T-CELLS IN RESPONSE TO ANTIGENIC OR
CC MITOGENIC STIMULATION, THIS PROTEIN IS REQUIRED FOR T-CELL
CC PROLIFERATION AND OTHER ACTIVITIES CRUCIAL TO REGULATION OF THE

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CC IMMUNE RESPONSE. CAN STIMULATE B CELLS, MONOCYTES, LYMPHOKINE-
CC ACTIVATED KILLER CELLS, NATURAL KILLER CELLS, AND GLIOMA CELLS.
CC -1- SUBCELLULAR LOCATION: Secreted.
CC -1- SIMILARITY: BELONGS TO THE IL-2 FAMILY.
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CC -----
CC EMBL; AF068057; AAC23838.1; -.
CC HSP; P01585; 31NK.
CC InterPro; IPR000779; Interleukin-2.
CC Pfam; PF00715; IL2; 1.
CC PRINTS; PR00265; INTERLEUKIN2.
CC ProDom; PD003649; Interleukin-2; 1.
CC SMART; SM00189; IL2; 1.
CC PROSITE; PS00424; INTERLEUKIN_2; 1.
CC Cytokine; Glycoprotein; Immune response; Signal; Growth factor;
CC T-cell.
CC FT SIGNAL 1 20 BY SIMILARITY.
CC CHAIN 21 153 INTERLEUKIN-2.
CC CARBOHYD 23 23 O-LINKED (GLCNAc. . .) (BY SIMILARITY).
CC FT CARBOHYD 111 111 N-LINKED (GLCNAc. . .) (POTENTIAL).
CC FT DISULFID 78 125 BY SIMILARITY.
CC SEQUENCE 153 AA; 17256 MW; 817336B2DDDB86 CRC64;
CC -----
CC Query Match 72.8%; Score 107; DB 1; Length 153;
CC Best Local Similarity 70.0%; Pred. No. 3.1e-09;
CC Matches 21; Conservative 6; Mismatches 3; Indels 0; Gaps 0;
CC -----
CC QY 1 APTSSSTKKTQLQLEHLHLLDLOMLNGNN 30
CC |||||:||||:||||:||||:||||:||||:|
CC Db 21 APTSSSTRETQEQQLQLLDLQVLLKGVDN 50
CC -----
CC RESULT 9
CC IL2_RAT
CC ID IL2_RAT STANDARD; PRT; 155 AA.
CC AC P17108;
CC DT 01-AUG-1990 (Rel. 15, Created)
CC DT 16-OCT-2001 (Rel. 40, Last sequence update)
CC DE Interleukin-2 precursor (IL-2) (T-cell growth factor) (TCGF).
CC GN IL2 OR IL-2.
CC OS Rattus norvegicus (Rat).
CC OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
CC OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
CC OX NCBI_TaxID=10116;
CC RN [1]
CC RP SEQUENCE FROM N.A.
CC RX MEDLINE=89339608; PubMed=2788130;
CC RA McKnight A.J., Mason D.W., Barclay A.N.;
CC RT "Sequence of rat interleukin 2 and anomalous binding of a mouse
CC interleukin 2 cDNA probe to rat MHC class II-associated invariant
CC chain mRNA.";
CC RL Immunogenetics 30:145-147(1989).
CC -1- FUNCTION: PRODUCED BY T-CELLS IN RESPONSE TO ANTIGENIC OR
CC MITOGENIC STIMULATION, THIS PROTEIN IS REQUIRED FOR T-CELL
CC PROLIFERATION AND OTHER ACTIVITIES CRUCIAL TO REGULATION OF THE
CC IMMUNE RESPONSE. CAN STIMULATE B CELLS, MONOCYTES, LYMPHOKINE-
CC ACTIVATED KILLER CELLS, NATURAL KILLER CELLS, AND GLIOMA CELLS.
CC -1- SUBCELLULAR LOCATION: Secreted.
CC -1- SIMILARITY: BELONGS TO THE IL-2 FAMILY.
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CC -----
CC EMBL; M22899; AAA41427.1; -.
CC PIR; A31278; A31278.
CC PIR; A45882; A45882.
CC HSP; P01585; 31NK.
CC InterPro; IPR000779; Interleukin-2.
CC Pfam; PF00715; IL2; 1.
CC PRINTS; PR00265; INTERLEUKIN2.
CC ProDom; PD003649; Interleukin-2; 1.
CC SMART; SM00189; IL2; 1.
CC PROSITE; PS00424; INTERLEUKIN_2; 1.
CC Cytokine; Glycoprotein; Immune response; Signal; Growth factor;
CC T-cell.
CC FT SIGNAL 1 20 INTERLEUKIN-2.
CC CHAIN 21 155 O-LINKED (GLCNAc. . .) (BY SIMILARITY).
CC CARBOHYD 23 23 O-LINKED (GLCNAc. . .) (BY SIMILARITY).
CC FT DISULFID 78 126 BY SIMILARITY.
CC SEQUENCE 155 AA; 17632 MW; 67A8554A73BF30A0 CRC64;
CC -----
CC Query Match 66.0%; Score 97; DB 1; Length 155;
CC Best Local Similarity 66.7%; Pred. NO. 1e-07;
CC Matches 20; Conservative 4; Mismatches 6; Indels 0; Gaps 0;
CC -----
CC QY 1 APTSSSTKKTQLQLEHLHLLDLOMLNGNN 30
CC |||||:||||:||||:||||:||||:||||:|
CC Db 21 APTSSSPKETQQLQLLDLQVLLRGIDN 50
CC -----
CC RESULT 10
CC IL2_PIG
CC ID IL2_PIG STANDARD; PRT; 154 AA.
CC AC P26891;
CC DT 01-AUG-1992 (Rel. 23, Created)
CC DT 01-AUG-1992 (Rel. 23, Last sequence update)
CC DT 01-MAR-2002 (Rel. 41, Last annotation update)
CC DE Interleukin-2 precursor (IL-2) (T-cell growth factor) (TCGF).
CC GN IL2.
CC OS Sus scrofa (Pig).
CC OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
CC OC Mammalia; Eutheria; Cetartiodactyla; Suidae; Sus.
CC OX NCBI_TaxID=9823;
CC RN [1]
CC RP SEQUENCE FROM N.A.
CC RC TISSUE=T-cell;
CC RX MEDLINE=91274360; PubMed=2054386;
CC RA Goodall J.C., Emery D.C., Bailey M., English L.S., Hall L.;
CC RT "cDNA cloning of porcine interleukin 2 by polymerase chain reaction.";
CC RL Biochim. Biophys. Acta 1089:257-258(1991).
CC RN [2]
CC RP SEQUENCE FROM N.A.
CC RC TISSUE=T-cell;
CC RA Lefevre F.;
CC RL Submitted (MAY-1991) to the EMBL/GenBank/DBJ databases.
CC RN [3]
CC RP SEQUENCE FROM N.A.
CC RA Iwata H., Hasegawa A., Yamamoto M., Oida T., Endo Y., Inoue T.;
CC RT "Structure of the porcine chromosomal interleukin-2 gene.";
CC Submitted (APR-2000) to the EMBL/GenBank/DBJ databases.
CC -1- FUNCTION: PRODUCED BY T-CELLS IN RESPONSE TO ANTIGENIC OR
CC MITOGENIC STIMULATION, THIS PROTEIN IS REQUIRED FOR T-CELL
CC PROLIFERATION AND OTHER ACTIVITIES CRUCIAL TO REGULATION OF THE
CC IMMUNE RESPONSE. CAN STIMULATE B CELLS, MONOCYTES, LYMPHOKINE-
CC ACTIVATED KILLER CELLS, NATURAL KILLER CELLS, AND GLIOMA CELLS.
CC -1- SUBCELLULAR LOCATION: Secreted.
CC -1- SIMILARITY: BELONGS TO THE IL-2 FAMILY.
CC -----
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CC -----
DR ENBL; X56750; CAA40071.1; -
DR EMBL; X58428; CAA41330.1; -
DR EMBL; AB041935; BABI61110.1; -
DR PIR; S15473; S15473.
DR PIR; S16241; S16241.
DR HSP; P01585; 3INK.
DR InterPro; IPR000779; Interleukin-2.
DR Pfam; PF00715; IL2; 1.
DR PRINTS; PR00265; INTERLEUKIN2.
DR ProDom; PD003649; Interleukin-2; 1.
DR SMART; SM00189; IL2; 1.
DR PROSITE; PS00424; INTERLEUKIN_2; 1.
DR Cytokine; Glycoprotein; Immune response; Signal; Growth factor;
DR KW T-cell.
DR SIGNAL 1 20 BY SIMILARITY.
DR FT CHAIN 21 154 INTERLEUKIN-2.
DR FT CARBOHYD 23 23 O-LINKED (GALNAAC. . .) (BY SIMILARITY).
DR FT DISULFID 78 126 BY SIMILARITY.
DR SQ SEQUENCE 154 AA; 17401 MW; F3B95E43DA3D3E1 CRC64;

Query Match 65.3%; Score 96; DB 1; Length 154;
Best Local Similarity 66.7%; Pred. No. 1.5e-07;
Matches 20; Conservative 4; Mismatches 6; Indels 0; Gaps 0;

QY 1 APTSSSTRKTOLEHLLDQLMILGINN 30
      ||||| 1: ||| |||||:| :|
Db 21 APTSSSTRKTKKQLEPLDLLQLLKVKYN 50

RESULT 11
IL2_MERUN STANDARD; PRT; 155 AA.
ID IL2_MERUN
AC Q08081.
DT 01-OCT-1994 (Rel. 30, Created)
DT 01-OCT-1994 (Rel. 30, Last sequence update)
DT 16-OCT-2001 (Rel. 40, Last annotation update)
DE Interleukin-2 precursor (IL-2) (T-cell growth factor) (TCGF).
GN IL2.
OS Meriones unguiculatus (Mongolian jird).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Gerbillinae;
OC Meriones.
OX NCBI_TaxID=10047;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=Spleen;
MEDLINE=94174702; PubMed=8128610;
MAI Z., Kousoulas K.G., Horohov D.W., Klei T.R.;
RA "Cross-species PCR cloning of gerbil (Meriones unguiculatus)
RT Interleukin-2 cDNA and its expression in COS-7 cells.";
RL Vet. Immunol. Immunopathol. 40:83-71(1994).
CC -! FUNCTION: PRODUCED BY T-CELLS IN RESPONSE TO ANTIGENIC OR
CC MYTOGENIC STIMULATION, THIS PROTEIN IS REQUIRED FOR T-CELL
CC PROLIFERATION AND OTHER ACTIVITIES CRUCIAL TO REGULATION OF THE
CC IMMUNE RESPONSE. CAN STIMULATE B CELLS, MONOCYTES, LYMPHOKINE-
CC ACTIVATED KILLER CELLS, NATURAL KILLER CELLS, AND GLIOMA CELLS.
CC -! SUBCELLULAR LOCATION: Secreted.
CC -! SIMILARITY: BELONGS TO THE IL-2 FAMILY.
CC -----
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CC -----
DR EMBL; X68779; CAM48679.1; -
DR PIR; S33509; S33509.
DR HSP; P01585; 3INK.

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KW T-cell.
FT SIGNAL 1 20 BY SIMILARITY.
FT CHAIN 21 149 INTERLEUKIN-2.
FT DISULFID 78 121 O-LINKED (GALNAC. . .) (BY SIMILARITY).
FT CARBOHYD 23 23 O-LINKED (GLCNAC. . .) (POTENTIAL).
FT CARBOHYD 106 106 R -> K (IN REF. 2).
FT CONFLICT 3 3 I -> S (IN REF. 2).
FT CONFLICT 8 8 S -> M (IN REF. 2).
FT CONFLICT 59 59 N -> D (IN REF. 2).
FT CONFLICT 125 125 E -> G (IN REF. 2).
FT CONFLICT 128 128 I -> F (IN REF. 2).
FT CONFLICT 145 145 L -> M (IN REF. 2).
FT CONFLICT 148 148 L -> M (IN REF. 2).
SQ SEQUENCE 149 AA; 17086 MW; 051BB8C47A0114FC CRC64;

Query Match 62.6%; Score 92; DB 1; Length 149;
Best Local Similarity 56.7%; Pred. No. 5.7e-07;
Matches 17; Conservative 8; Mismatches 5; Indels 0; Gaps 0;

QY 1 APTSSSTKKTKQLQLHLLLDLQMLINGINN 30
    ||||| :||| :||| :||| :||| :|||
Db 21 APTSSSKRETQQLKQLQMDLKLLEGVNN 50

RESULT 13
IL2_ORCOR
ID IL2_ORCOR STANDARD; PRT; 152 AA.
AC O97513;
DT 30-MAY-2000 (Rel. 39, Created)
DT 30-MAY-2000 (Rel. 39, Last sequence update)
DT 16-OCT-2001 (Rel. 40, Last annotation update)
DE Interleukin-2 precursor (IL-2) (T-cell growth factor) (TCGF)
DE (Fragment).
DE
GN IL2.
OS Orcinus orca (Killer whale).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Cetacea; Odontoceti; Delphinidae;
OC Orcinus.
OX NCBI_TaxID=9733;
RN [1]
RP SEQUENCE FROM N.A.
RA Ness T.L., Bradley W.G., Reynolds J.E. III, Roess W.B.;
RT "Isolation and expression of the interleukin-2 gene from the killer
RT whale, Orcinus orca.;"
RL Mamm. Sci. 14:531-543(1998).
CC -!- FUNCTION: PRODUCED BY T-CELLS IN RESPONSE TO ANTIGENIC OR
CC MITOGENIC STIMULATION, THIS PROTEIN IS REQUIRED FOR T-CELL
CC PROLIFERATION AND OTHER ACTIVITIES CRUCIAL TO REGULATION OF THE
CC IMMUNE RESPONSE. CAN STIMULATE B CELLS, MONOCYTES, LYMPHOKINE-
CC ACTIVATED KILLER CELLS, NATURAL KILLER CELLS, AND GLIOMA CELLS (BY
CC SIMILARITY).
CC -!- SUBCELLULAR LOCATION: Secreted.
CC -!- SIMILARITY: BELONGS TO THE IL-2 FAMILY.
CC
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FT CHAIN 21 >152 INTERLEUKIN-2.
FT CARBOHYD 23 23 O-LINKED (GALNAC. . .) (BY SIMILARITY).
FT DISULFID 78 126 BY SIMILARITY.
FT NON_TER 152 152
SQ SEQUENCE 152 AA; 17424 MW; 308F91821ECCB764 CRC64;

Query Match 59.9%; Score 88; DB 1; Length 152;
Best Local Similarity 60.0%; Pred. No. 2.4e-06;
Matches 18; Conservative 6; Mismatches 6; Indels 0; Gaps 0;

QY 1 APTSSSTKKTKQLQLHLLLDLQMLINGINN 30
    ||||| :||| :||| :||| :||| :|||
Db 21 APTSSSTNTKKQVQSLQDLQLLKEINN 50

RESULT 14
IL2_BOVIN
ID IL2_BOVIN STANDARD; PRT; 155 AA.
AC P05016;
DT 13-AUG-1987 (Rel. 05, Created)
DT 13-AUG-1987 (Rel. 05, Last sequence update)
DT 16-OCT-2001 (Rel. 40, Last annotation update)
DE Interleukin-2 precursor (IL-2) (T-cell growth factor) (TCGF).
DE IL2 OR IL-2.
GN Bos taurus (Bovine).
OS Bos taurus (Bovine).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;
OC Bovidae; Bovinae; Bos.
OX NCBI_TaxID=9913;
RN [1]
RP SEQUENCE FROM N.A.
RX MEDLINE-86205869; PubMed-3517854;
RA Cerretti D.P., McKerghan K., Larsen A., Cantrell M.A., Anderson D.,
RA Gillis S., Cosman D., Baker P.E.;
RT "Cloning, sequence, and expression of bovine interleukin 2.;"
RL Proc. Natl. Acad. Sci. U.S.A. 83:3223-3227(1986).
RN [2]
RP SEQUENCE FROM N.A.
RX MEDLINE-86205870; PubMed-3486415;
RA Reeves R., Spies A.G., Nissen M.S., Buck C.D., Weinberg A.D.,
RA Barr P.J., Magnuson N.S., Magnuson J.A.;
RT "Molecular cloning of a functional bovine interleukin 2 cDNA.;"
RL Proc. Natl. Acad. Sci. U.S.A. 83:3228-3232(1986).
RN [3]
RP SEQUENCE OF 1-22 FROM N.A.
RC TISSUE=Thymus; Vinogradova T.V., Votoshin O.N.;
RA Anikeeva N.N.;
RL Submitted (DEC-1989) to the EMBL/GenBank/DBJ databases.
CC -!- FUNCTION: PRODUCED BY T-CELLS IN RESPONSE TO ANTIGENIC OR
CC MITOGENIC STIMULATION, THIS PROTEIN IS REQUIRED FOR T-CELL
CC PROLIFERATION AND OTHER ACTIVITIES CRUCIAL TO REGULATION OF THE
CC IMMUNE RESPONSE. CAN STIMULATE B CELLS, MONOCYTES, LYMPHOKINE-
CC ACTIVATED KILLER CELLS, NATURAL KILLER CELLS, AND GLIOMA CELLS.
CC -!- SUBCELLULAR LOCATION: Secreted.
CC -!- SIMILARITY: BELONGS TO THE IL-2 FAMILY.
CC
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DR SMART; SM00189; IL2; 1.
DR PROSITE; PS00424; INTERLEUKIN_2; 1.
KW Cytokine; Glycoprotein; Immune response; Signal; Growth factor;
FT SIGNAL 1 20
FT CHAIN 21 155 INTERLEUKIN-2.
FT DISULFID 79 127 BY SIMILARITY.
FT CARBOHYD 23 23 O-LINKED (GALNAC. . .) (BY SIMILARITY).
FT CONFLICT 66 66 V -> A (IN REF. 2).
SQ SEQUENCE 155 AA; 17627 MW; 816667DFEA052EDF CRC64;

Query Match 53.7%; Score 79; DB 1; Length 155;
Best Local Similarity 53.3%; Pred. No. 5,7e-05;
Matches 16; Conservative 6; Mismatches 8; Indels 0; Gaps 0;

QY 1 APTSSSTKKTQLQLEHLLDLQMLNGINN 30
   ||||| | : : : ||||| : | : |
Db 21 APTSSSTGNTMKVKSLLDLQLLLEKVN 50

RESULT 15
IL2_CAPHI STANDARD; PRT; 155 AA.
AC P36835; P79156;
DT 01-JUN-1994 (Rel. 29, Created)
DT 01-JUN-1994 (Rel. 29, Last sequence update)
DT 16-OCT-2001 (Rel. 40, Last annotation update)
DE Interleukin-2 precursor (IL-2) (T-cell growth factor) (TCGF).
GN IL2.
OS Capra hircus (Goat).
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
OC Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovidae;
OC Bovidae; Caprinae; Capra.
OX NCBI_TaxID=9925;
RN [1]
RP SEQUENCE FROM N.A.
RC TISSUE=Blood;
RA Rimstad E.;
RL Submitted (NOV-1993) to the EMBL/GenBank/DBJ databases.
RN [2]
RP SEQUENCE FROM N.A.
RA Beyer J.C.; Cheevers W.P.;
RL Submitted (DEC-1996) to the EMBL/GenBank/DBJ databases.
CC -!- FUNCTION: PRODUCED BY T-CELLS IN RESPONSE TO ANTIGENIC OR
CC MITOGENIC STIMULATION, THIS PROTEIN IS REQUIRED FOR T-CELL
CC PROLIFERATION AND OTHER ACTIVITIES CRUCIAL TO REGULATION OF THE
CC IMMUNE RESPONSE. CAN STIMULATE B CELLS, MONOCYTES, LYMPHOKINE-
CC ACTIVATED KILLER CELLS, NATURAL KILLER CELLS, AND GLIOMA CELLS.
CC -!- SUBCELLULAR LOCATION: Secreted.
CC -!- SIMILARITY: BELONGS TO THE IL-2 FAMILY.
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CC -----
DR EMBL; X76063; CAA53664.1; -.
DR EMBL; U34274; AAB38527.1; -.
DR PIR; S38662; S38662.
DR HSP; P01565; 3INK.
DR InterPro; IPR000779; Interleukin-2.
DR Pfam; PF00715; IL2; 1.
DR PRINTS; PR00265; INTERLEUKIN2.
DR ProDom; PD003649; Interleukin-2; 1.
DR SMART; SM00189; IL2; 1.
DR PROSITE; PS00424; INTERLEUKIN_2; 1.
KW Cytokine; Glycoprotein; Immune response; Signal; Growth factor;
FT SIGNAL 1 20 BY SIMILARITY.
FT CHAIN 21 155 INTERLEUKIN-2.

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FT CARBOHYD 23 23 O-LINKED (GALNAC. . .) (BY SIMILARITY).
FT DISULFID 79 127 BY SIMILARITY.
FT CONFLICT 3 5 RMO -> QIP (IN REF. 2).
FT CONFLICT 22 22 P -> T (IN REF. 2).
FT CONFLICT 30 30 T -> P (IN REF. 2).
FT CONFLICT 51 51 L -> P (IN REF. 2).
FT CONFLICT 71 71 D -> A (IN REF. 2).
FT CONFLICT 89 89 D -> E (IN REF. 2).
FT CONFLICT 99 99 R -> L (IN REF. 2).
FT CONFLICT 107 113 YMASLKG -> SMDNIKR (IN REF. 2).
FT CONFLICT 140 140 Q -> L (IN REF. 2).
FT CONFLICT 144 144 T -> I (IN REF. 2).
FT CONFLICT 154 154 L -> M (IN REF. 2).
SQ SEQUENCE 155 AA; 17703 MW; 90022DFEB6AF78DE CRC64;

Query Match 53.7%; Score 79; DB 1; Length 155;
Best Local Similarity 53.3%; Pred. No. 5,7e-05;
Matches 16; Conservative 6; Mismatches 8; Indels 0; Gaps 0;

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QY 1 APTSSSTKKTQLQLEHLLDLQMLNGINN 30
   ||||| | : : : ||||| : | : |
Db 21 APTSSSTGNTMKVKSLLDLQLLLEKVN 50

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Search completed: October 21, 2002, 09:49:03
Job time : 12 secs

GenCore version 5.1.3
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OM protein - protein search, using sw model

Run on: October 21, 2002, 09:47:56 ; Search time 16 seconds
(without alignments)
180.168 Million cell updates/sec

Title: US-09-720-828A-4

Perfect score: 147

Sequence: 1 APTSSSTRKTKQLQLEHLLLDQMLINGINN 30

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 283138 seqs, 96089334 residues

Total number of hits satisfying chosen parameters: 283138

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database :

1: PIR1:.*
2: PIR2:.*
3: PIR3:.*
4: PIR4:.*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	DB ID	Description
1	147	100.0	153	1	ICHU2
2	147	100.0	153	1	ICG12
3	114	77.6	154	2	JN0698
4	97	66.0	155	2	A31278
5	96	65.3	154	2	S16241
6	95	64.6	155	2	S33509
7	92	62.6	149	2	S31391
8	79	53.7	155	2	S38662
9	79	53.7	155	2	S11488
10	79	53.7	155	2	I45913
11	69	46.9	169	2	S37289
12	64	43.5	169	1	ICMS2
13	59.5	40.5	60	2	I68870
14	58.5	39.8	62	2	I54512
15	57.5	39.1	72	2	I68871
16	54	36.7	357	2	S12169
17	52	35.4	737	2	G82262
18	51	34.7	304	2	F95285
19	51	34.7	627	2	E70122
20	50	34.0	365	2	C70701
21	49	33.3	343	2	F82217
22	49	33.3	1130	2	A89130
23	48.5	33.0	240	2	T22210
24	48	32.7	155	1	F64145
25	48	32.7	189	2	H64307
26	48	32.7	441	2	AB1367
27	48	32.7	441	2	AC1736
28	48	32.7	1061	1	GNLTG4
29	47.5	32.3	244	2	T11685

ALIGNMENTS

RESULT 1

ICHU2

interleukin-2 precursor [validated] - human
N:Alternate names: IL-2; T-cell growth factor

C:Species: Homo sapiens (man)

C>Date: 11-Aug-1983 #sequence_revision 11-Aug-1983 #text_change 08-Dec-2000

C:Accession: A01849; A21192; A20961; S31209; A93297; A90113; A93478; I56518; I73624

R:Holbrook, N.J.; Lieber, M.; Crabtree, G.R.

Nucleic Acids Res. 12, 5005-5013, 1984

A:Title: DNA sequence of the 5' flanking region of the human interleukin 2 gene: ho

A:Reference number: A93524; MUID:84247353

A:Accession: A01849

A:Molecule type: DNA

A:Residues: 1-153 <HOL>

A:Cross-references: GB:X00695; GB:X00200; GB:X00201; GB:X00202; NID:g33783; PIDN:CA

R:Fujita, T.; Takaoka, C.; Matsui, H.; Taniguchi, T.

Proc. Natl. Acad. Sci. U.S.A. 80, 7437-7441, 1983

A:Title: Structure of the human interleukin 2 gene.

A:Reference number: A21192; MUID:84170243

A:Accession: A21192

A:Molecule type: DNA

A:Residues: 1-153 <PUJ>

A:Cross-references: GB:X00264; NID:g186294; PIDN:ADA8509.1; PID:g5729676

R:Holbrook, N.J.; Smith, R.A.; Fornace Jr., A.J.; Comau, C.M.; Wiskocil, R.L.; Crab

Proc. Natl. Acad. Sci. U.S.A. 81, 1634-1638, 1984

A:Title: T-cell growth factor: complete nucleotide sequence and organization of the

A:Reference number: A20961; MUID:84170356

A:Accession: A20961

A:Molecule type: DNA

A:Residues: 1-153 <HO2>

A:Cross-references: GB:X02056; NID:g186302; PIDN:AAA98792.1; PID:g386819

R:Laabi, Y.; Gras, M.P.; Carbonnel, F.; Brouet, J.C.; Berger, R.; Larsen, C.J.; Tsai

EMBO J. 11, 3997-3904, 1992

A:Title: A new gene, BCM, on chromosome 16 is fused to the interleukin 2 gene by a t

A:Reference number: S31209; MUID:93010984

A:Accession: S31209

A:Molecule type: mRNA

A:Residues: 11-117 <LAA>

A:Cross-references: EMBL:214955

A:Note: this sequence is shown from the beginning of the fragment to the chromosomal

R:Taniguchi, T.; Matsui, H.; Fujita, T.; Takaoka, C.; Kashima, N.; Yoshimoto, R.; Ha

Nature 302, 305-310, 1983

A:Title: Structure and expression of a cloned cDNA for human interleukin-2.

A:Reference number: A93297; MUID:83167472

A:Accession: A93297

A:Molecule type: mRNA

A:Residues: 1-153 <FAN>

A:Cross-references: GB:V00564; NID:g33780; PIDN:CAA23827.1; PID:g33781

A:Experimental source: Leukemic T-cell line, Jurkat-III, cloned from Jurkat-FHCR

R:Maeda, S.; Nishino, N.; Obaru, K.; Mita, S.; Nomiya, H.; Shimada, K.; Fujimoto,

Biochem. Biophys. Res. Commun. 115, 1040-1047, 1983

A:Title: Cloning of interleukin 2 mRNAs from human tonsils.

A:Reference number: A90113; MUID:84023840
A:Accession: A90113
A:Molecule type: mRNA
A:Residues: 1-153 <ENR>
A:Cross-references: GB:J00264; NID:g186294; PIDN:ADA48509.1; PID:g5729676
A:Experimental source: tonsillar mononuclear cells
R:Devos, R.; Plaetnick, G.; Cheroutre, H.; Simons, G.; Degraeve, W.; Tavernier, J.; Remau
Nucleic Acids Res. 11, 4307-4323, 1983
A:Title: Molecular cloning of human Interleukin 2 cDNA and its expression in Escherichia
A:Reference number: A93478; MUID:83246551
A:Accession: A93478
A:Molecule type: mRNA
A:Residues: 1-153 <DEV>
A:Cross-references: GB:V00564; NID:g33780; PIDN:CAA23827.1; PID:g33781
A:Experimental source: splenocytes
R:Eisenberg, O.; Faber-Elman, A.; Lotan, M.; Schwartz, M.
J. Neurochem. 64, 1928-1936, 1995
A:Title: Interleukin-2 transcripts in human and rodent brains: possible expression by as
A:Reference number: I56518; MUID:95239150
A:Accession: I56518
A:Status: translated from GB/EMBL/DBJ
A:Molecule type: mRNA
A:Residues: 1-152 <EIZ>
A:Cross-references: GB:S77834; NID:g999000
A:Accession: I73624
A:Status: preliminary; translated from GB/EMBL/DBJ
A:Molecule type: mRNA
A:Residues: 5-7, 'P', 9-17, 'P', 19-32, 'X', 34-45, 'X', 47-143 <RES>
A:Cross-references: GB:S77835; NID:g999001; PIDN:AAI4264.1; PID:g4261964
R:Nishino, N.; Oberu, K.; Maeda, S.; Shimada, K.; Onoue, K.
Biomed. Res. 6, 197-205, 1985
A:Title: Organization of the DNA regions flanking the human interleukin 2 gene.
A:Reference number: I52528
A:Accession: I52528
A:Status: translated from GB/EMBL/DBJ
A:Molecule type: DNA
A:Residues: 1-68 <REG>
A:Cross-references: GB:M33199; NID:g186296; PIDN:AAA59141.1; PID:g553508
R:Siebenlist, U.; Durand, D.B.; Bressler, P.; Holbrook, N.J.; Norris, C.A.; Kamoun, M.;
Mol. Cell. Biol. 6, 3042-3049, 1986
A:Title: Promoter region of interleukin-2 gene undergoes chromatin structure changes and
A:Reference number: I57603; MUID:87064618
A:Accession: I57603
A:Status: translated from GB/EMBL/DBJ
A:Molecule type: DNA
A:Residues: 1-68 <REG>
A:Cross-references: GB:M13879; NID:g186305; PIDN:AAA59141.1; PID:g553509
R:Weir, M.P.; Chaplin, M.A.; Wallace, D.M.; Dykes, C.W.; Hobden, A.N.
Biochemistry 27, 6883-6892, 1988
A:Title: Structure-activity relationships of recombinant human interleukin 2.
A:Reference number: I52401; MUID:89062420
A:Contents: recombinant IL-2 and mutants expressed in E. coli
A:Accession: I52401
A:Status: translated from GB/EMBL/DBJ
A:Molecule type: DNA
A:Residues: 'M', 21-153 <REA>
A:Cross-references: GB:M22005; NID:g186300; PIDN:AAA59140.1; PID:g386818
A:Note: mutation of Phe-42 to Ala reduced binding to the IL-2 receptor 5-10 fold without
R:Robb, R.J.; Kutny, M.A.; Panico, M.; Morris, H.R.; Chowdhry, V.
Proc. Natl. Acad. Sci. U.S.A. 81, 6486-6490, 1984
A:Title: Amino acid sequence and post-translational modification of human interleukin 2.
A:Reference number: A94009; MUID:85038540
A:Accession: A94009
A:Molecule type: protein
A:Residues: 21-153 <ROB>
A:Note: disulfide bonds and carbohydrate binding site were determined
A:Note: heterogeneity in Jurkat-derived IL-2 is primarily due to differences in glycosyl
n in lacking 21-Ala (FT-IL2-A and FT-IL2-B) and 22-Pro (FT-IL2-B)
R:Conradt, H.S.; Nimtz, M.; Dittmar, K.E.J.; Lindenmaier, W.; Hoppe, J.; Hauser, H.
J. Biol. Chem. 264, 17368-17373, 1989
A:Title: Expression of human interleukin-2 in recombinant baby hamster kidney, Ltk-, and
de.
A:Reference number: A34463; MUID:90008901

A:Accession: A34463
A:Molecule type: protein
A:Residues: 21-35 <CON>
A:Note: the O-linked glycosylation site in recombinant material matched that from hu
R:Grabenhorst, E.; Hofer, B.; Nimtz, M.; Jaeger, V.; Conradt, H.S.
Eur. J. Biochem. 215, 189-197, 1993
A:Title: Biosynthesis and secretion of human interleukin 2 glycoproteins variants fr
A:Reference number: S34052; MUID:93345493
A:Contents: annotation; glycosylation of variant forms expressed in insect cells
C:Genetics:
A:Gene: GDB:IL2
A:Cross-references: GDB:119344; OMIM:147680
A:Map position: 4q26-4q27
A:Introns: 49/3; 69/3; 117/3
C:Superfamily: Interleukin-2
C:Keywords: cytokine; glycoprotein; growth factor; immunoregulation; lymphokine; T-
F:1-20/Domain: signal sequence #status predicted <SIG>
F:21-153/Product: interleukin-2 #status experimental <IL2>
F:23/Binding site: carbohydrate (Thr) (covalent) #status experimental
F:78-125/Disulfide bonds: #status experimental
Query Match 100.0%; Score 147; DB 1; Length 153;
Best Local Similarity 100.0%; Pred. No. 1.6e-14;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
Oy 1 APTSSSTKKTQLQLEHLLDLQMLNGINN 30
Db 21 APTSSSTKKTQLQLEHLLDLQMLNGINN 50
RESULT 2
ICG12
Interleukin-2 precursor - common gibbon
N:Alternate names: IL-2; T-cell growth factor
C:Species: Hylobates lar (common gibbon, white-handed gibbon)
C:Date: 31-Dec-1991 #sequence_revision 31-Dec-1991 #text_change 22-Jun-1999
C:Accession: A94067; A01849
R:Chen, S.J.; Holbrook, N.J.; Mitchell, K.F.; Vallone, C.A.; Greengard, J.S.; Crabtr
Proc. Natl. Acad. Sci. U.S.A. 82, 7284-7288, 1985
A:Title: A viral long terminal repeat in the interleukin 2 gene of a cell line that
A:Reference number: A94067; MUID:86042650
A:Accession: A94067
A:Molecule type: mRNA
A:Residues: 1-153 <CHE>
A:Cross-references: GB:M11144; NID:g177014; PIDN:AAA35454.1; PID:g177015
A:Experimental source: leukemia cell line MLA 144; ATCC TIB 201
A:Note: the integration of a retrovirus sequence containing a 5' LTR into the 3' non
C:Superfamily: interleukin-2
C:Keywords: cytokine; glycoprotein; growth factor; immunoregulation; lymphokine; T-
F:1-20/Domain: signal sequence #status predicted <SIG>
F:21-153/Product: interleukin-2 #status predicted <IL2>
F:23/Binding site: carbohydrate (Thr) (covalent) #status predicted
F:78-125/Disulfide bonds: #status predicted
Query Match 100.0%; Score 147; DB 1; Length 153;
Best Local Similarity 100.0%; Pred. No. 1.6e-14;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
Oy 1 APTSSSTKKTQLQLEHLLDLQMLNGINN 30
Db 21 APTSSSTKKTQLQLEHLLDLQMLNGINN 50
RESULT 3
JN0698
Interleukin 2 precursor - cat
C:Species: Felis silvestris catus (domestic cat)
C:Date: 03-Feb-1994 #sequence_revision 03-Feb-1994 #text_change 16-Jul-1999
C:Accession: JN0698
R:Cozzi, P.J.; Padrial, P.A.; Takeda, J.; Alegre, M.L.; Yuhki, N.; Leff, A.R.
Biochem. Biophys. Res. Commun. 194, 1038-1043, 1993
A:Title: Sequence and functional characterization of feline interleukin 2.
A:Reference number: JN0698; MUID:93356765

A:Accession: JN0698
A>Status: nucleic acid sequence not shown
A:Molecule type: mRNA
A:Residues: 1-154 <COZ>
C:Cross-references: GB:U19402; PIDN:AAA02865.1; PID:g304314
C:Superfamily: Interleukin-2
C:Keywords: growth factor

Query Match 77.6%; Score 114; DB 2; Length 154;

Best Local Similarity 73.3%; Pred. No. 1.3e-09; Mismatches 3; Indels 0; Gaps 0;

Matches 22; Conservative 5; Mismatches 3; Indels 0; Gaps 0;
QY 1 APTSSSTKKTQLOLEHLDDQLQMLNGINN 30
II IIIIIIIII III IIIIIIIIIIIIIIIIIII
DB 21 APASSSTKETQOQLEQLLDQLLLNGVNN 50

RESULT 4

A31278

Interleukin-2 precursor - rat

N:Alternate names: IL-2; T-cell growth factor

C:Species: Rattus norvegicus (Norway rat)

C:Date: 26-Apr-1989 #sequence_revision 26-Apr-1989 #text_change 16-Jul-1999

C:Accession: A45882; A31278

R:McKnight, A.J.; Mason, D.W.; Barclay, A.N.

Immunogenetics 30, 145-147, 1989

A:Title: Sequence of rat Interleukin 2 and anomalous binding of a mouse interleukin 2 cd

A:Reference number: A45882; MUID:89339608

A:Accession: A45882

A>Status: preliminary

A:Molecule type: mRNA

A:Residues: 1-155 <MCK>

A:Cross-references: GB:M22899; NID:g204909; PIDN:AAA41427.1; PID:g204910

C:Superfamily: Interleukin-2

C:Keywords: cytokine; glycoprotein; growth factor; immunoregulation; T-cell

Query Match

66.0%; Score 97; DB 2; Length 155;

Best Local Similarity 56.7%; Pred. No. 4.7e-07;

Matches 20; Conservative 4; Mismatches 6; Indels 0; Gaps 0;

QY 1 APTSSSTKKTQLOLEHLDDQLQMLNGINN 30
IIIII I III IIIIIIIIIIIIIIIIIII
DB 21 APTSSPAKETQOQLEQLLDQLVLLRGDNN 50

RESULT 5

S16241

Interleukin-2 precursor - pig

N:Alternate names: IL-2; T-cell growth factor

C:Species: Sus scrofa domestica (domestic pig)

C:Date: 30-Jun-1992 #sequence_revision 30-Jun-1992 #text_change 16-Jul-1999

C:Accession: S16241; S15473

R:Goodall, J.C.; Emery, D.C.; Bailey, M.; English, L.S.; Hall, L.

Biochim. Biophys. Acta 1089, 257-258, 1991

A:Title: cDNA cloning of porcine interleukin 2 by polymerase chain reaction.

A:Reference number: S16241; MUID:91274360

A:Accession: S16241

A:Molecule type: mRNA

A:Residues: 1-154 <GOO>

A:Cross-references: EMBL:X56750; NID:g1991; PIDN:CAA40071.1; PID:g1992

R:Lefevre, F.

submitted to the EMBL Data Library, March 1991

A:Description: Molecular cloning of porcine interleukin 2 cDNA by the polymerase chain r

A:Reference number: S15473

A:Accession: S15473

A:Molecule type: mRNA

A:Residues: 1-154 <LEF>

C:Cross-references: EMBL:X58428; NID:g2068; PIDN:CAA41330.1; PID:g2069

C:Superfamily: Interleukin-2

C:Keywords: cytokine; glycoprotein; growth factor; immunoregulation; T-cell

F:1-20/Domain: signal sequence #status predicted <SIG>

F:21-154/Product: interleukin-2 #status predicted <MAT>

Query Match 65.3%; Score 96; DB 2; Length 154;
Best Local Similarity 66.7%; Pred. No. 6.6e-07;
Matches 20; Conservative 4; Mismatches 6; Indels 0; Gaps 0;

QY 1 APTSSSTKKTQLOLEHLDDQLQMLNGINN 30
IIIIIII I III IIIIIIIIIIIIIIIIIII
DB 21 APTSSSTKKTQLOLEHLDDQLLLKEVKN 50

RESULT 6

S33509

Interleukin-2 - Mongolian jird

C:Species: Meriones unguiculatus (Mongolian jird)

C:Date: 06-Jan-1995 #sequence_revision 06-Jan-1995 #text_change 16-Jul-1999

C:Accession: S33509

R:Mal, Z.; Klei, T.; Horohov, D.

submitted to the EMBL Data Library, October 1992

A:Description: Cross-species PCR cloning of jird (Meriones unguiculatus) interleuki

A:Reference number: S33509

A:Accession: S33509

A>Status: preliminary

A:Molecule type: mRNA

A:Residues: 1-155 <MAL>

A:Cross-references: EMBL:X68779; NID:g577588; PIDN:CAA48679.1; PID:g311638

C:Superfamily: Interleukin-2

Query Match

64.6%; Score 95; DB 2; Length 155;

Best Local Similarity 66.7%; Pred. No. 9.4e-07;

Matches 20; Conservative 2; Mismatches 8; Indels 0; Gaps 0;

QY 1 APTSSSTKKTQLOLEHLDDQLQMLNGINN 30
IIIII I III IIIIIIIIIIIIIIIIIII
DB 21 APTSSPAKETQOQLEQLLDQLQMLNGINN 50

RESULT 7

S31391

Interleukin-2 precursor - horse

C:Species: Equus caballus (domestic horse)

C:Date: 13-Jan-1995 #sequence_revision 13-Jan-1995 #text_change 16-Jul-1999

C:Accession: S31391

R:Tavernor, A.S.; Butcher, G.W.

submitted to the EMBL Data Library, November 1992

A:Description: cDNA cloning of equine interleukin-2 by polymerase chain reaction.

A:Reference number: S31391

A:Accession: S31391

A>Status: preliminary

A:Molecule type: mRNA

A:Residues: 1-149 <TAV>

A:Cross-references: EMBL:X69393; NID:g1076; PIDN:CAA49190.1; PID:g1077

C:Superfamily: Interleukin-2

Query Match

62.6%; Score 92; DB 2; Length 149;

Best Local Similarity 56.7%; Pred. No. 2.5e-06;

Matches 17; Conservative 8; Mismatches 5; Indels 0; Gaps 0;

QY 1 APTSSSTKKTQLOLEHLDDQLQMLNGINN 30
IIIIII :II III I :IIIIII :IIII
DB 21 APTSSSKRETQOQLEQLQMLKLLLEGVNN 50

RESULT 8

S38662

Interleukin-2 - goat

C:Species: Capra aegagrus hircus (domestic goat)

C:Date: 06-Jan-1995 #sequence_revision 06-Jan-1995 #text_change 16-Jul-1999

C:Accession: S38662

R:Ramstad, E.

submitted to the EMBL Data Library, November 1993

A:Description: The molecular cloning and expression of caprine interleukin 2.

A:Reference number: S38662

A:Accession: S38662

A>Status: preliminary

A;Molecule type: mRNA
A;Residues: 1-155 <R1
A;Cross-references: E
C;Superfamily: interl

Query Match 53.7%; Score 79; DB 2; Length 155;
Best Local Similarity 53.3%; Pred. No. 0.00023;
Matches 16; Conservative 5; Mismatches 8; Indels

QY 1 APTSSSTKKTQLQLEHLLDLQMLNGINN 30
 ||||| | :: |||||:| : |
 Db 21 APTSSSTGMTKEVKSLLDLQLEKVN 50

RESULT 9

SL1488
interleukin-2 precursor - sheep
C:Species: Ovis orientalis aries, Ovis ammon aries (domestic sheep)
C:Date: 21-Nov-1993 #sequence_revision 10-Nov-1995 #text_change 16-Jul-1999
C:Accession: S11488 #S13102; S15517
R:Goodall, J.C.; Emery, D.C.; Perry, A.C.F.; English, L.S.; Hall, L.
Nucleic Acids Res. 18, 5883, 1990
A:Title: cDNA cloning of ovine interleukin 2 by PCR.
A:Reference number: S11488; MUID:91016933
A:Accession: S11488
A:Status: preliminary
A:Molecule type: mRNA
A:Residues: 1-155 <GOO>
A:Cross-references: EMBL:X53934; NID:g1281; PIDN:CAA37881.1; PID:g1282
R:Seow, H.F.; Rothel, J.S.; Radford, A.J.; Wood, P.R.
Nucleic Acids Res. 18, 7175, 1990
A:Title: The molecular cloning of ovine interleukin 2 gene by the polymerase chain reaction
A:Reference number: S13102; MUID:91088336
A:Accession: S13102
A:Status: preliminary
A:Molecule type: mRNA
A:Residues: 1-5, 'L', 7-155 <SEO>
A:Cross-references: EMBL:X55641; NID:g1810; PIDN:CAA39165.1; PID:g1811
R:Bujdosó, R.; Williamson, M.L.; Sargan, D.R.; Hein, W.H.; McConnell, I.
submitted to the EMBL Data Library, April 1991
A:Reference number: S15517

```
Query Match      53.7%; Score 79; DB 2; Length 155;
Best Local Similarity 53.3%; Pred. No. 0.00023;
Matches 16; Conservative 6; Mismatches 8; Indels 0; Gaps 0;
```

```

QY 1 APTSSSTKKTQLQLEHLLDLQMLNGINN 30
      | | | | | | | : : | | | | : |
Db 21 APTSSSTGNTMKVKSLLDLQLEKVN 50

```

RESULT 10

interleukin-2 precursor - bovine
 C:Species: Bos primigenius taurus (cattle)
 C:Date: 16-Aug-1996 #sequence_revision 16-Aug-1996 #text_change 16-Jul-1999
 C:Accession: I45913; S21470; S20761
 R:Gerrett, D.P.; McKereghan, K.; Larsen, A.; Cantrell, M.A.; Anderson, D.; Gillis, S.;
 Proc. Natl. Acad. Sci. U.S.A. 83, 3223-3227, 1986
 A:Title: Cloning, sequence, and expression of bovine interleukin 2.
 A:Reference number: I45913; MUID:86205869
 A:Accession: I45913
 A:Status: preliminary; translated from GB/EMBL/DDBJ
 A:Molecule type: mRNA
 A:Residues: 1-155 <CER>
 A:Cross-references: GB:M12791; NID:gl63204; PIDN:AAA30586.1; PID:g163205
 R:Anikeeva, N.N.; Vinogradova, T.V.; Votoshko, O.N.

submitted to the EMBL Data Library, December 1989

A:Reference number: S21470
 A:Accession: S21470
 A:Molecule type: DNA
 A:Residues: 1-22 <AN2>
 A:Cross-references: EMBL:X17201; NID:g452; PIDN:CAA35062.1; PID:g453
 C:Genetics:
 A:Gene: IL-2
 C:Superfamily: interleukin-2
 C:Keywords: cytokine; glycoprotein; growth factor; immunoregulation;

Query Match 53.7%; Score 79; DB 2; Length 155;
Best Local Similarity 53.3%; Pred. NO. 0.00023;
Matches 16; Conservative 6; Mismatches 8; Indels

QY 1 APTSSSTKKTQLQLEHLLLDLQMLNGINN 30
 1111111 1 :: 11111:1 : 1
 Db 21 APTSSSTGNTMKEVKSLLDLQLLEKVKVN 50

RESULT 11

C:Species: Mus musculus (house mouse)
 C:date: 13-Jan-1995 #sequence_revision 13-Jan-1995 #text_change 16-Jul-1999
 C:Accession: S37289; S36162; S24936
 R: Todd, J.A.
 submitted to the EMBL Data Library, April 1993
 A: reference number: S37289
 A: Accession: S37289
 A: Status: preliminary
 A: Molecule type: mRNA
 A: Residues: 1-169 <TOD>
 A: Cross-references: EMBL:X73040
 R: Matesanz, F.; Alcina, A.; Pellicer, A.
 Biochim. Biophys. Acta 1132, 335-336, 1992
 A: title: A new cDNA sequence for the murine interleukin-2 gene.
 A: reference number: S27205; MUID:93041941
 A: Accession: S27205
 A: Molecule type: mRNA
 A: Residues: 1-63 <MATE>
 A: Cross-references: EMBL:X66058; NID:g52725; PIDN:CAA46854.1; PID:g52726
 R: Ghosh, S.; Palmer, S.M.; Rodrigues, N.R.; Cordell, H.J.; Hearne, C.M.; Co-
 Nature Genet. 4, 404-409, 1993
 A: title: Polygenic control of autoimmune diabetes in nonobese diabetic mice
 A: reference number: S36162; MUID:94004970

Query Match 46.9%; Score 69; DB 2; Length 169;
Best Local Similarity 47.2%; Pred. No. 0.008;
Matches 17; Conservative 6; Mismatches 7; Indels

```
Qy 1 APTSSSTKTKQLQ-----LEHLLDLQMLNGINN 30
      :||||| : | | | | | | | | | | | | : |
Dh 29 SPTSSSTFAFOOOOOOOOHHLEQIMDLQELLSRMEN 64
```

DECEMBER 1993

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RESULT 12
ICMS2
Interleukin-2 precursor - mouse
N:Alternate names: IL-2; T-cell growth factor (TCGF)
C:Species: Mus musculus (house mouse)
C:Date: 30-Jun-1987 #sequence_revision 30-Jun-1987 #text_change 21-Jul-2000
C:Accession: J03550; A54490; A94064; I48597; A01850; I84713
R:Fuse, A.; Fujita, T.; Yasumitsu, H.; Kashima, N.; Hasegawa, K.; Taniguchi, T.

```

```

QY 1 APTSSST-----KKTQLQLHLLLDLQMILN 26
      :||||| :: | |||||::
DB 25 SPTSSSTSTAQAQQQQQHLEQLMDLOELLS 57

RESULT 14
I54512
interleukin 2 - mouse (fragment)
C:Species: Mus musculus (house mouse)
C>Date: 02-Aug-1996 #sequence_revision 02-Aug-1996 #text_change 16-Jul-1999
C:Accession: I54512
R:Matesanz, F.; Alcina, A.; Pellicer, A.
Immunogenetics 38, 300-303, 1993
A:Title: Existence of at least five interleukin-2 molecules in different mouse strains
A:Reference number: I54512; MUID:93307791
A:Accession: I54512
A>Status: preliminary; translated from GB/EMBL/DBJ
A:Molecule type: DNA
A:Residues: 1-62 <RES>
A:Cross-references: GB:L07574; NID:g349513; PIDN:AAA39326.1; PID:g349514
C:Genetics:
A:Gene: il-2
C:Superfamily: interleukin-2

Query Match 39.8%; Score 58.5; DB 2; Length 62;
Best Local Similarity 42.9%; Pred. No. 0.094;
Matches 15; Conservative 6; Mismatches 5; Indels 9; Gaps 1;

QY 1 APTSSST-----KKTQLQLHLLLDLQMILN 26
      :||||| :: | |||||::
DB 25 SPTSSSTSTAQAQQQQQHLEQLMDLOELLS 59

RESULT 15
I68871
interleukin 2 - mouse (fragment)
C:Species: Mus musculus (house mouse)
C>Date: 02-Aug-1996 #sequence_revision 02-Aug-1996 #text_change 16-Jul-1999
C:Accession: I68871
R:Matesanz, F.; Alcina, A.; Pellicer, A.
Immunogenetics 38, 300-303, 1993
A:Title: Existence of at least five interleukin-2 molecules in different mouse strains
A:Reference number: I54512; MUID:93307791
A:Accession: I68871
A>Status: preliminary; translated from GB/EMBL/DBJ
A:Molecule type: DNA
A:Residues: 1-72 <RES>
A:Cross-references: GB:L07576; NID:g349517; PIDN:AAA39328.1; PID:g349518
C:Genetics:
A:Gene: il-2
C:Superfamily: interleukin-2

Query Match 39.1%; Score 57.5; DB 2; Length 72;
Best Local Similarity 35.6%; Pred. No. 0.16;
Matches 16; Conservative 5; Mismatches 5; Indels 19; Gaps 1;

QY 1 APTSSSTTKTQLQ-----LEHLLDLQMILN 26
      :||||| :: | |||||::
DB 25 SPTSSSTAQAQQQQQQQQQQQHLEQLMDLOELLS 69

Search completed: October 21, 2002, 09:49:58
Job time : 19 secs

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GenCore version 5.1.3
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OM protein - protein search, using sw model

Run on: October 21, 2002, 09:46:41 ; Search time 30 Seconds
(without alignments)
111.074 Million cell updates/sec

Title: US-09-720-828A-4

Perfect score: 147

Sequence: 1 APTSSSTKTKTQLLEHLLLDLQMLNGINN 30

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 747574 seqs, 11107396 residues

Total number of hits satisfying chosen parameters: 747574

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database : A_Geneseq_032802.*
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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Result No.	Score	Query Match	Length	ID	Description
1	147	100.0	30	21	AAV51598 Human IL-2 derived
2	147	100.0	31	21	AAV51597 Human IL-2 derived
3	147	100.0	58	12	AAAR1015 Human interleukin-
4	147	100.0	60	11	AAAR06838 Human IL-2 N-termi
5	147	100.0	60	15	AAAR48245 Human interleukin-
6	147	100.0	88	17	AAAR95433 Human interleukin-
7	147	100.0	96	15	AAAR68899 Human pro-insulin
8	147	100.0	96	16	AAAR78652 Fusion protein con
9	147	100.0	120	6	AAAP50864 Sequence of interl
10	147	100.0	128	12	AAAR10906 Interleukin-2 muta
11	147	100.0	129	12	AAAR10905 Interleukin-2 muta

12	147	100.0	129	12	AAAR10908 Interleukin-2 muta
13	147	100.0	130	12	AAAR10907 Interleukin-2 muta
14	147	100.0	131	4	AAAP30044 Sequence of interl
15	147	100.0	131	6	AAAP50217 Sequence of human
16	147	100.0	132	12	AAAR10901 Interleukin-2 muta
17	147	100.0	132	12	AAAR10902 Interleukin-2 muta
18	147	100.0	132	12	AAAR10903 Interleukin-2 muta
19	147	100.0	132	12	AAAR10904 Interleukin-2 muta
20	147	100.0	133	5	AAAP40048 Sequence of an int
21	147	100.0	133	5	AAAP40044 Sequence of the hu
22	147	100.0	133	6	AAAP50163 Sequence of interl
23	147	100.0	133	6	AAAP50857 Sequence of interl
24	147	100.0	133	6	AAAP50858 Sequence of interl
25	147	100.0	133	6	AAAP50859 Sequence of interl
26	147	100.0	133	6	AAAP50860 Sequence of interl
27	147	100.0	133	6	AAAP50861 Sequence of interl
28	147	100.0	133	6	AAAP50862 Sequence of interl
29	147	100.0	133	6	AAAP50863 Sequence of interl
30	147	100.0	133	7	AAAP60833 Oxidation resistan
31	147	100.0	133	7	AAAP60834 Oxidation resistan
32	147	100.0	133	7	AAAP60835 Oxidation resistan
33	147	100.0	133	7	AAAP60836 Oxidation resistan
34	147	100.0	133	7	AAAP60837 Oxidation resistan
35	147	100.0	133	7	AAAP60838 Oxidation resistan
36	147	100.0	133	7	AAAP61100 Antigenic fragment
37	147	100.0	133	7	AAAP61651 Plasmid pIC0135-8
38	147	100.0	133	7	AAAP61725 Sequence of non-gi
39	147	100.0	133	7	AAAP60220 Sequence encoded b
40	147	100.0	133	7	AAAP61783 Sequence of human
41	147	100.0	133	8	AAAP70495 Interleukin 2 alal
42	147	100.0	133	9	AAAP80128 Interleukin 2 alal
43	147	100.0	133	9	AAAP80129 Human interleukin-
44	147	100.0	133	10	AAAP91923 Recombinant human
45	147	100.0	133	11	AAAR00593

ALIGNMENTS

RESULT 1

AAV51598
ID AAV51598 standard; Protein; 30 AA.

XX AC AAV51598;

XX DT 25-MAY-2000 (first entry)

XX DE Human IL-2 derived peptide IP130 #2.

XX KW IL-2; interleukin 2; human; Ip130; immunosuppressive; antirheumatic;
KW graft rejection; autoimmune disorder; rheumatoid arthritis.

XX OS Homo sapiens.

XX PN WO200004048-A1.

XX PD 27-JAN-2000.

XX PF 16-JUL-1999; 99WO-IB01424.

XX PR 16-JUL-1998; 98US-0116594.

XX (INSP) INST PASTEUR.

XX These J; Eckenberg R, Moreau J, Goldberg M, Rose T, Alzari P;

PI Mazie J;

XX WPI: 2000-182403/16.

DR N-PSDB; AAZ88838.

XX Novel cytokine peptides and antibody for preventing and/or treating
PT undesirable immune reactions e.g. graft rejection and autoimmune
PT disorders


```

Db      2 APTSSSTKKTQLQLEHLLLDLQMLINGINN 31
|||||
RESULT 4
AAR06838
ID AAR06838 standard; protein; 60 AA.
XX
AC AAR06838;
XX
XX 14-JAN-1991 (first entry)
XX
DE Human IL-2 N-terminal transcript of plasmid pT13S.
XX
KW Bovine tuberculosis; Interleukin-2; IL-2; plasmid pT13S.
XX
OS Mycobacterium bovis.
XX
PN JP02193895-A.
XX
PD 02-AUG-1990.
XX
PF 24-JAN-1989; 89JP-0013270.
XX
PR 24-JAN-1989; 89JP-0013270.
XX
PA (AJIN ) AJINOMOTO KK.
XX
DR WPI: 1990-278851/37.
DR N-PSDB; AAO05976.
XX
XX BCG bacteria derived immuno:protein MPB70 - can be used as
PT diagnostic agent used to determine bovine tuberculosis.
XX
XX Disclosure; Fig 2; 11pp; Japanese.
XX
CC Immunoprotein MPB 70 encoding sequence may be incorporated into
CC plasmid pT13S with an N-terminal fragment of human IL-2. The plasmid
CC may be used to transform an expression system giving a fusion
CC protein which may be used as a diagnostic agent for bovine
CC tuberculosis infection.
XX
SQ Sequence 60 AA;
Query Match 100.0%; Score 147; DB 11; Length 60;
Best Local Similarity 100.0%; Pred. No. 2.3e-13;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
OY 1 APTSSSTKKTQLQLEHLLLDLQMLINGINN 30
|||
DB 2 APTSSSTKKTQLQLEHLLLDLQMLINGINN 31
|||
RESULT 5
AAR48245
ID AAR48245 standard; Protein; 60 AA.
XX
AC AAR48245;
XX
XX 12-JUL-1994 (first entry)
XX
DE Human Interleukin-2.
XX
KW non-coding region; coding region; resonance; interaction; IL-2;
KW optimisation; degenerate sequence; plasmid pT13SNco; pT9-11;
KW gene expression; regulation; recombinant protein production;
KW interleukin-2; interleukin-6.
XX
OS Homo sapiens.
XX
PN FR2692594-A.
XX
PD 24-DEC-1993.

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XX 22-JUN-1992; 92FR-0007571.
XX
XX 22-JUN-1992; 92FR-0007571.
XX
PA (PERE/) PEREZ J.
XX
PI Perez J;
XX
DR WPI: 1994-028256/04.
DR N-PSDB; AAO55629, AAO55630.
XX
XX Application of optimised gene expression - for scientific,
PT industrial and therapeutic purposes
XX
PS Disclosure; Fig 28 and Fig 29; 110pp; French.
XX
CC Resonances between coding and non-coding regions were measured for
CC the native human IL-2 gene in plasmid pT911 (see AAO55630) and a
CC synthetic IL-2 gene (AAO55629) in which alternative, degenerate
CC codons were used in order to introduce additional restriction
CC sites. It was found that the degenerate changes greatly upset the
CC "natural order" between coding and non-coding regions; as a result,
CC the amount of protein expressed by the degenerate gene is likely to
CC be adversely affected. The inventors have proposed an "optimised"
CC IL-2 gene with the aim of increasing the amount of protein expressed
CC by the gene. (N.B. the sequence is also described as
CC interleukin-6).
XX
SQ Sequence 60 AA;
Query Match 100.0%; Score 147; DB 15; Length 60;
Best Local Similarity 100.0%; Pred. No. 2.3e-13;
Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
OY 1 APTSSSTKKTQLQLEHLLLDLQMLINGINN 30
|||
DB 2 APTSSSTKKTQLQLEHLLLDLQMLINGINN 31
|||
RESULT 6
AAR95433
ID AAR95433 standard; Protein; 88 AA.
XX
AC AAR95433;
XX
XX 17-SEP-1996 (first entry)
XX
DE Interleukin-2 ALPHA segment.
XX
KW Multifunctional protein; targetted hetero-association;
KW protein assembly; antibody engineering; interleukin-2; IL-2;
KW cytokine; tumour; therapy.
XX
OS Synthetic.
XX
XX WO9613583-A2.
XX
XX 09-MAY-1996.
XX
XX 20-OCT-1995; 95WO-EP04117.
XX
XX 20-OCT-1994; 94EP-0116558.
XX
PA (MORP-) MORPHOSYS GES PROTEINOPTIMIERUNG MBH.
XX
PI Lupas A, Pack P;
XX
XX WPI: 1996-239496/24.
XX N-PSDB; AAT15267.
XX
XX Targetted hetero-association of recombinant proteins to
PT multi-functional complexes - useful for therapeutic and diagnostic

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CC residues of mercaptan per Cys residue of proinsulin. The reaction
 CC takes place in the presence of a chaotropic auxiliary agent at
 CC pH 10-11 and results in proinsulin with correctly linked cystine
 CC bridges. Reaction with trypsin and opt. carboxypeptidase B yields
 CC correctly folded insulin. The insulin is isolated by absorption on
 CC a hydrophobic resin.
 XX
 SQ Sequence 96 AA;

Query Match 100.0%; Score 147; DB 16; Length 96;
 Best Local Similarity 100.0%; Pred. No. 3.8e-13;

Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 APTSSSTKTKQLQLEHLLDLQMLINGINN 30
 |||||

Db 2 APTSSSTKTKQLQLEHLLDLQMLINGINN 31
 |||||

RESULT 9

AAP50864
 ID AAP50864 standard; Protein; 120 AA.

AC AAP50864;

XX 01-DEC-1991 (first entry)

DE Sequence of Interleukin II (IL-2) analogue 341 [stop121] IL-II.

XX Immunotherapy; lymphokine; interleukin-2; thymocyte mitogenesis.

XX WO8500817-A.

XX 28-FEB-1985.

XX 09-AUG-1984; 84WO-US01252.

XX 03-AUG-1984; 84US-0635941.

PR 10-AUG-1983; 83US-0521967.

XX (AMGE-) AMGEN.

XX Souza LM, Stabinsky Y;

XX WPI; 1985-062280/10.

PT Microbial expression of interleukin II and analogues - by using
 PT manufactured DNA sequences to transform microorganisms

XX Claim 341; Page 35; 39pp; English.

CC The inventors claim a manufactured gene for the prodn. of IL-2 and
 CC analogues, and for polypeptides of IL-2 and analogues, and for
 CC methods for their recombinant production.

SQ Sequence 120 AA;

Query Match 100.0%; Score 147; DB 6; Length 120;
 Best Local Similarity 100.0%; Pred. No. 4.8e-13;

Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 APTSSSTKTKQLQLEHLLDLQMLINGINN 30
 |||||

Db 1 APTSSSTKTKQLQLEHLLDLQMLINGINN 30
 |||||

RESULT 10

AAR10906

ID AAR10906 standard; Protein; 128 AA.

AC AAR10906;

XX 10-MAY-1991 (first entry)

XX

DE Interleukin-2 mutant psi 141 (delta74-78).

XX interleukin-2; IL-2; immunostimulant.

XX Synthetic.

XX WO9102000-A.

XX 21-FEB-1991.

XX 30-JUL-1990; 90WO-US04258.

XX 02-AUG-1989; 89US-0388557.

XX (SERA-) SERAGEN INC.

XX Genbauffe FS, Akiyoshi D;

XX WPI; 1991-073489/10.

XX N-PSDB; AAQ10780.

PT Mutant interleukin -2 molecules binding to interleukin-2 receptor
 PT - linked with diphtheria toxin to treat eg interleukin-2
 PT receptor positive malignancies or prevent graft rejection

XX Claim 2; Page 9; 17pp; English.

XX In this mutant IL-2 Gln(74), Ser(75), Lys(76), Asn(77) and Phe(78)
 CC have been deleted. The mutant IL-2 may be covalently linked to a
 CC portion of a toxin molecule eg diphtheria, which is large enough
 CC to have cytotoxic activity but small enough not to exhibit general
 CC eukaryotic cell binding. The IL-2/toxin hybrid can be used to treat
 CC immune disorders involving the IL-2 receptor. The mutant IL-2 on its
 CC own can be used as an immunostimulant.
 CC See also AAQ10775-9, AAQ10781-Q10782.

XX SQ Sequence 128 AA;

Query Match 100.0%; Score 147; DB 12; Length 128;
 Best Local Similarity 100.0%; Pred. No. 5.2e-13;

Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 APTSSSTKTKQLQLEHLLDLQMLINGINN 30
 |||||

Db 1 APTSSSTKTKQLQLEHLLDLQMLINGINN 30
 |||||

RESULT 11

AAR10905

ID AAR10905 standard; Protein; 129 AA.

XX AAR10905;

XX 10-MAY-1991 (first entry)

DE Interleukin-2 mutant psi 143 (delta75-77).

XX interleukin-2; IL-2; immunostimulant.

XX Synthetic.

XX WO9102000-A.

XX 21-FEB-1991.

XX 30-JUL-1990; 90WO-US04258.

XX 02-AUG-1989; 89US-0388557.

XX (SERA-) SERAGEN INC.

XX Genbauffe FS, Akiyoshi D;

XX

DR WPI; 1991-073489/10.
 DR N-PSDB; AAQ10779.
 XX
 PT Mutant interleukin -2 molecules binding to interleukin-2 receptor
 PT - linked with diphtheria toxin to treat eg interleukin-2
 PT receptor positive malignancies or prevent graft resection
 XX
 XX Claim 7; Page 9; 17pp; English.
 XX
 CC Ser(75), Lys(76) and Asn(77) have been deleted, as has His(79). The
 CC mutant IL-2 may be covalently linked to a portion of a toxin molecule
 CC eg diphtheria, which is large enough to have cytotoxic activity but
 CC small enough not to exhibit general eukaryotic cell binding. The IL-2
 CC /toxin hybrid can be used to treat immune disorders involving the IL-2
 CC receptor. The mutant IL-2 on its own can be used as an
 CC immunostimulant. See also AAQ10775-8, AAQ10780-Q10782.
 XX
 SQ Sequence 129 AA;
 Query Match 100.0%; Score 147; DB 12; Length 129;
 Best Local Similarity 100.0%; Pred. No. 5.2e-13;
 Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 APTSSSTKKTQLQLEHLLDLQMLINGINN 30
 DB 1 APTSSSTKKTQLQLEHLLDLQMLINGINN 30
 RESULT 12
 AARI0908
 ID AARI0908 standard; Protein; 129 AA.
 XX
 AC AARI0908;
 DT 10-MAY-1991 (first entry)
 DE Interleukin-2 mutant psi 150 (delta76-79).
 XX
 KW Interleukin-2; IL-2; immunostimulant.
 XX
 OS Synthetic.
 XX
 PN WO9102000-A.
 PD 21-FEB-1991.
 XX
 PF 30-JUL-1990; 90WO-US04258.
 XX
 PR 02-AUG-1989; 89US-0388557.
 XX
 PA (SERA-) SERAGEN INC.
 XX
 PI Genbauffe FS, Akiyoshi D;
 DR WPI; 1991-073489/10.
 DR N-PSDB; AAQ10782.
 XX
 PT Mutant interleukin -2 molecules binding to interleukin-2 receptor
 PT - linked with diphtheria toxin to treat eg interleukin-2
 PT receptor positive malignancies or prevent graft resection
 XX
 XX Claim 4; Page 9; 17pp; English.
 XX
 CC Lys(76), Asn(77), Phe(78) and His(79) have been deleted. The mutant
 CC IL-2 may be covalently linked to a portion of a toxin molecule eg
 CC diphtheria, which is large enough to have cytotoxic activity but
 CC small enough not to exhibit general eukaryotic cell binding. The
 CC IL-2/toxin hybrid can be used to treat immune disorders involving
 CC the IL-2 receptor. The mutant IL-2 on its own can be used as an
 CC immunostimulant. See also AAQ10775-Q10781.
 XX
 SQ Sequence 129 AA;
 Query Match 100.0%; Score 147; DB 12; Length 129;
 Best Local Similarity 100.0%; Pred. No. 5.2e-13;
 Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 APTSSSTKKTQLQLEHLLDLQMLINGINN 30
 DB 1 APTSSSTKKTQLQLEHLLDLQMLINGINN 30
 RESULT 13
 AARI0907
 ID AARI0907 standard; Protein; 130 AA.
 XX
 AC AARI0907;
 DT 10-MAY-1991 (first entry)
 DE Interleukin-2 mutant psi 145 (delta76-78).
 XX
 KW Interleukin-2; IL-2; immunostimulant.
 XX
 OS Synthetic.
 XX
 PN WO9102000-A.
 PD 21-FEB-1991.
 XX
 PF 30-JUL-1990; 90WO-US04258.
 XX
 PR 02-AUG-1989; 89US-0388557.
 XX
 PA (SERA-) SERAGEN INC.
 XX
 PI Genbauffe FS, Akiyoshi D;
 DR WPI; 1991-073489/10.
 DR N-PSDB; AAQ10781.
 XX
 PT Mutant interleukin -2 molecules binding to interleukin-2 receptor
 PT - linked with diphtheria toxin to treat eg interleukin-2
 PT receptor positive malignancies or prevent graft resection
 XX
 XX Claim 4; Page 9; 17pp; English.
 XX
 CC Lys(76), Asn(77) and Phe(78) have been deleted. The mutant IL-2 may
 CC be covalently linked to a portion of a toxin molecule eg
 CC diphtheria, which is large enough to have cytotoxic activity but
 CC small enough not to exhibit general eukaryotic cell binding. The
 CC IL-2/toxin hybrid can be used to treat immune disorders involving
 CC the IL-2 receptor. The mutant IL-2 on its own can be used as an
 CC immunostimulant. See also AAQ10775-Q10780, AAQ10782
 XX
 SQ Sequence 130 AA;
 Query Match 100.0%; Score 147; DB 12; Length 130;
 Best Local Similarity 100.0%; Pred. No. 5.3e-13;
 Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 APTSSSTKKTQLQLEHLLDLQMLINGINN 30
 DB 1 APTSSSTKKTQLQLEHLLDLQMLINGINN 30
 RESULT 14
 AAP30044
 ID AAP30044 standard; peptide; 131 AA.
 XX
 AC AAP30044;
 DT 04-APR-1992 (first entry)
 DE Sequence of interleukin-2 (IL-2) II.
 XX

Query Match 100.0%; Score 147; DB 12; Length 129;
 Best Local Similarity 100.0%; Pred. No. 5.2e-13;
 Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 APTSSSTKKTQLQLEHLLDLQMLINGINN 30
 DB 1 APTSSSTKKTQLQLEHLLDLQMLINGINN 30
 RESULT 13
 AARI0907
 ID AARI0907 standard; Protein; 130 AA.
 XX
 AC AARI0907;
 DT 10-MAY-1991 (first entry)
 DE Interleukin-2 mutant psi 145 (delta76-78).
 XX
 KW Interleukin-2; IL-2; immunostimulant.
 XX
 OS Synthetic.
 XX
 PN WO9102000-A.
 PD 21-FEB-1991.
 XX
 PF 30-JUL-1990; 90WO-US04258.
 XX
 PR 02-AUG-1989; 89US-0388557.
 XX
 PA (SERA-) SERAGEN INC.
 XX
 PI Genbauffe FS, Akiyoshi D;
 DR WPI; 1991-073489/10.
 DR N-PSDB; AAQ10781.
 XX
 PT Mutant interleukin -2 molecules binding to interleukin-2 receptor
 PT - linked with diphtheria toxin to treat eg interleukin-2
 PT receptor positive malignancies or prevent graft resection
 XX
 XX Claim 4; Page 9; 17pp; English.
 XX
 CC Lys(76), Asn(77) and Phe(78) have been deleted. The mutant IL-2 may
 CC be covalently linked to a portion of a toxin molecule eg
 CC diphtheria, which is large enough to have cytotoxic activity but
 CC small enough not to exhibit general eukaryotic cell binding. The
 CC IL-2/toxin hybrid can be used to treat immune disorders involving
 CC the IL-2 receptor. The mutant IL-2 on its own can be used as an
 CC immunostimulant. See also AAQ10775-Q10780, AAQ10782
 XX
 SQ Sequence 130 AA;
 Query Match 100.0%; Score 147; DB 12; Length 130;
 Best Local Similarity 100.0%; Pred. No. 5.3e-13;
 Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 APTSSSTKKTQLQLEHLLDLQMLINGINN 30
 DB 1 APTSSSTKKTQLQLEHLLDLQMLINGINN 30
 RESULT 14
 AAP30044
 ID AAP30044 standard; peptide; 131 AA.
 XX
 AC AAP30044;
 DT 04-APR-1992 (first entry)
 DE Sequence of interleukin-2 (IL-2) II.
 XX

KW T-cell growth factor; mitogen; antitumour; lymphokine; T-lymphokine.
 OS Escherichia coli x 1776/pil 2-50A FERM BP-226.
 XX EP91539-A.
 XX 19-OCT-1983.
 PD
 XX 18-MAY-1982; 82EP-0082509.
 XX 29-DEC-1982; 82JP-0230371.
 PR 31-MAR-1982; 82JP-0051122.
 PR 18-MAY-1982; 82JP-0082509.
 PR 15-DEC-1982; 82JP-0219518.
 PR 24-DEC-1982; 82JP-0229619.
 PR 27-DEC-1982; 82JP-0234607.
 PR 03-FEB-1983; 83EP-0101035.
 PR 29-DEC-1982; 82JP-0230372.
 XX (AJIN) AJINOMOTO KK.
 PA (NICA-) JAPAN FOUND CANCER RES.
 PA (GANK-) ZH GAN KENYUKAI.
 XX Taniguchi T, Muramatsu M, Sugano H, Matsui H, Kashima N;
 PI Hamuro J;
 PI WPI; 1983-796529/43.
 DR
 XX Cloned gene coded for interleukin-2 poly:peptide - useful in
 PT prodn. of stable interleukin-2- prod.
 XX
 PS Disclosure; Fig 2b; 82pp; English.
 XX The inventors claim a cloned IL-2 gene, esp. AAN30031 and fragments
 CC and DNA encoding AAP30043-P30045. The gene is used to prod.
 CC recombinant IL-2 which is stable at pH2-9 and on heating at 56
 CC degrees C and promotes the growth of monoclonal functional T-cells.
 XX
 SQ Sequence 131 AA;
 Query Match 100.0%; Score 147; DB 4; Length 131;
 Best Local Similarity 100.0%; Pred. No. 5.3e-13;
 Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 APTSSSTKKTQLOLEHLLDLOMLNGINN 30
 DB 1 APTSSSTKKTQLOLEHLLDLOMLNGINN 30
 RESULT 15
 AAP50217
 ID AAP50217 standard; Protein; 131 AA.
 XX
 AC AAP50217;
 XX
 DT 16-OCT-1991 (first entry)
 XX
 DE Sequence of human interleukin-2 (IL-2) mature protein, sequence II.
 XX
 KW T cell growth factor; lymphokine; lymphocyte reactivity modulator;
 KW thymocyte mitogenesis; cytotoxic T cell reactivity.
 XX
 OS Homo sapiens.
 XX
 PN EP142268-A.
 XX
 PD 22-MAY-1985.
 XX
 PF 11-OCT-1984; 84EP-0306934.
 XX
 PR 18-OCT-1983; 83GB-0027880.
 XX
 PA (AJIN) AJINOMOTO KK.

PA (NICA-) JAPANESE FOUND CANCER RE.
 XX (GANK-) GAN KENYUKAI ZH.
 XX Taniguchi T, Matsui H, Hamuro J, Sato T, Sano K;
 XX WPI; 1985-124043/21.
 DR N-PSDB; AAN50219.
 XX
 PT Prodn. of interleukin-2 polypeptide - by cultivation of
 PT Saccharomyces cerevisiae transformed with gene and vector DNA
 XX
 PS Disclosure; Fig 2b; 48pp; English.
 XX The IL-2 gene of the invention is prepd. with RNA produced by an
 CC IL-2 producing mammalian cell, e.g. a human T-lymphocyte,
 CC transformed human T-lymphocyte or T-cell hybridoma. The mRNA is
 CC obtainable as a sediment of 11-12S of sucrose density gradient
 CC centrifugation. The N-terminal region of the deduced IL-2
 CC polypeptide is quite hydrophobic and this region probably serves as
 CC a signal peptide which is cleaved during the secretion process of
 CC the mature IL-2. Such cleavage occurs either between Ser and Ala at
 CC position 20 and 21 or between Ala and Pro at position 21 and 22
 CC respectively (see AAP50215,P50216), forming the polypeptide having AA
 CC sequences II and III (see AAP50217,P50218).
 XX
 SQ Sequence 131 AA;
 Query Match 100.0%; Score 147; DB 6; Length 131;
 Best Local Similarity 100.0%; Pred. No. 5.3e-13;
 Matches 30; Conservative 0; Mismatches 0; Indels 0; Gaps 0;
 QY 1 APTSSSTKKTQLOLEHLLDLOMLNGINN 30
 DB 1 APTSSSTKKTQLOLEHLLDLOMLNGINN 30
 Search completed: October 21, 2002, 09:48:44
 Job time : 30 secs

